SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

[*The* MINING JOURNAL *is Registered at the General Post Office as a Newspaper, and for Transmission Abroad.*]

No. 2156.—VOL. XLVI. LONDON, SATURDAY, DECEMBER 2, 1876. PRICE (WITH THE JOURNAL) SIXPENCE. PER ANNUM, BY POST, £1 4s.

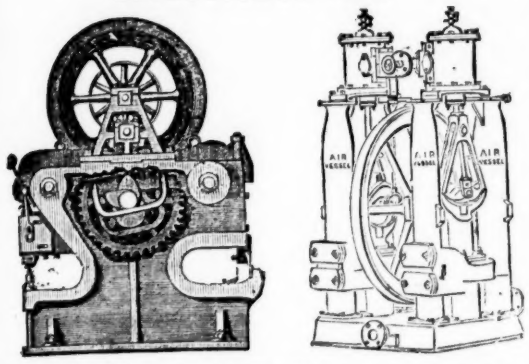
JOHN CAMERON'S

SPECIALITIES ARE ALL SIZES OF

Steam Pumps, Shipbuilders' Tools,

BAR SHEARS.

ESTABLISHED 1852.



OLDFIELD ROAD IRON WORKS,

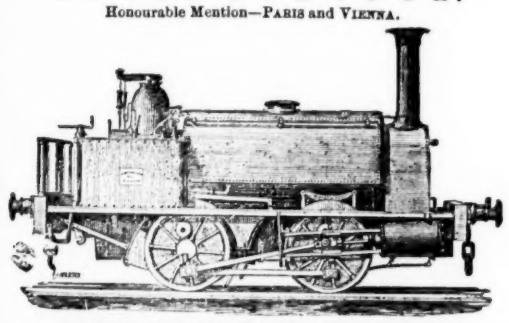
SALFORD, MANCHESTER.

HENRY HUGHES AND CO.

FALCON WORKS,

LOUGHBOROUGH.

Honourable Mention—PARIS and VIENNA.



LOCOMOTIVE TANK ENGINES,

For COLLIERIES, MINERAL, and CONTRACTORS' RAILWAYS, of the best materials and workmanship, always in progress, from 6 to 14 in. cylinders, four or six wheels coupled, for cash, hire, or deferred payments.

For Excellence and Practical Success of Engines

Represented by Model exhibited by this Firm.

HARVEY AND CO.

ENGINEERS AND GENERAL MERCHANTS,

HAYLE, CORNWALL,

LONDON OFFICE,—18, GRESHAM HOUSE, E.C.

MANUFACTURERS OF

PUMPING and other LAND ENGINES and MARINE STEAM ENGINES of the largest and most approved kinds in use, SUGAR MACHINERY, MILLWORK, MINING MACHINERY, AND MACHINERY IN GENERAL. SHIPBUILDERS IN WOOD AND IRON.

MANUFACTURERS OF

HUSBAND'S PATENT PNEUMATIC STAMPS.

SECONDHAND MINING MACHINERY FOR SALE,

IN GOOD CONDITION, AT MODERATE PRICES—viz.,

PUMPING ENGINES; WINDING ENGINES; STAMPING ENGINES; STEAM CAPSTANS; ORE CRUSHERS; BOILERS and PITWORK of various sizes and descriptions; and all kinds of MATERIALS required for MINING PURPOSES.

THE

PHOSPHOR BRONZE

COMPANY (LIMITED).

139, CANNON STREET, E.C.

LONDON.

Alloy, No. II., for pinions, ornamental castings, steem fittings, &c.	£120	per ton.
" No. IV., for pinions, pumps, valves, linings, cylinders, &c.	130	"
" No. VI. (must be cast in chill) for bolts, &c. This alloy has very great tensile strength ...	140	"
" No. VII., for hydraulic pumps, valves, and plungers, piston rings, bushes and bearings, for steel shafts	140	"
" No. XI., special phosphor-bronze bearing metal, wearing five times as long as gun metal	112	"

The prices of castings vary according to the pattern, the quantity required, and the alloy used.

WIRE ROPES, TUBES OF ALL DESCRIPTIONS, &c.

PARIS, BRONZE MEDAL, 1867. ORDER OF THE CROWN OF PRUSSIA. FALMOUTH, SILVER MEDAL, 1867

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the Geographical Congress, Paris, 1875—M. Favre, Contractor, having exhibited the McKean Drill alone as the MODEL BORING MACHINE for the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where

THE McKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecutive weeks, ending February 7, was 24·90, 27·60, 24·80, 26·10, 28·30, 27·10, 28·40, 28·70 metres. Total advance of south heading during January was **121·30 metres, or 133 yards.**

In a series of comparative trials made at the St. Gothard Tunnel, the McKean Rock Drill continued to work until the pressure was reduced to one-half atmosphere (7½ lbs.), showing almost the entire motive force to be available for the blow against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these Machines for the SEVERN TUNNEL; the LONDON AND NORTH-WESTERN RAILWAY for the FESTINIOG TUNNEL: and the BRITISH GOVERNMENT for several Public Works. A considerable number of Mining Companies are now using them. Shafts and Galleries are driven at from three to six times the speed of hand labour, according to the size and number of machines employed, and with important saving in cost. The ratio of advantage over hand labour is greatest where the rock is hardest.

These Machines possess many advantages, which give them a value unapproached by any other system of Boring Machine.

THE McKEAN ROCK DRILL IS ATTAINING GENERAL USE THROUGHOUT THE WORLD FOR MINING, TUNNELLING, QUARRYING, AND SUB-MARINE BORING.

The McKEAN ROCK DRILLS are the most powerful—the most portable—the most durable—the most compact—of the best mechanical device. They contain the fewest parts—have no weak parts—act without SHOCK upon any of the operating parts—work with a lower pressure than any other Rock Drill—may be worked at a higher pressure than any other—may be run with safety to FIFTEEN HUNDRED STROKES PER MINUTE—do not require a mechanic to work them—are the smallest, shortest, and lightest of all machines—will give the longest feed without change of tool—work with long or short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or open work. Their working parts are best protected against grit and accidents. The various methods of mounting them are the most efficient.

N.B.—Correspondents should state particulars as to character of work in hand in writing us for information, on receipt of which a special definite answer, with reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL, IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

McKEAN AND CO.,

ENGINEERS.

OFFICES,

42 BOROUGH ROAD, LONDON, S.E.; and 5, RUE SCRIBE, PARIS.

MANUFACTURED FOR McKEAN AND CO. BY MESSRS. P. AND W. MACLELLAN, "CLUTHA IRONWORKS," GLASGOW.

The Warsop Rock Drill

(Involving an entirely new principle in Mechanical Boring)

Requires only 20 lbs. steam or air-pressure.

Has only two moving parts—thus ensuring freedom from derangement, and is absolutely self-feeding.

Is excessively light, and can be carried by one man, who can with the **No. 1** size (weighing only 35 lbs.) drill **40** holes ⅞ in. diameter and 1½ in. deep per hour, in the hardest Aberdeen granite for splitting purposes.

WARSOP AND HILL,

HYDRAULIC AND GENERAL ENGINEERS.

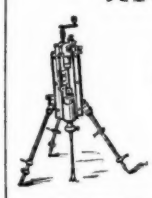
NOTTINGHAM.

STEAM and HYDRAULIC WINDING and PUMPING ENGINES of all kinds.

DUNN'S ROCK DRILL,

AND

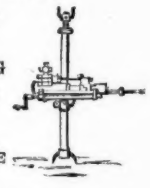
AIR COMPRESSORS.



DRIVING BED ROCK TUNNELS, SINKING SHAFTS, AND PERFORMING OPEN FIELD OPERATIONS,

IS THE

CHEAPEST, SIMPLEST, STRONGEST, & MOST EFFECTIVE DRILL IN THE WORLD.



OFFICE,—193, GOSWELL ROAD

(W. W. DUNN AND CO.),

LONDON, E.C.

THE

PATENT SELF-ACTING MINERAL DRESSING MACHINE COMPANY

(LIMITED).

T. CURRIE GREGORY, C.E., F.G.S.

OFFICES,—GLASGOW: 150, ST. VINCENT STREET.
LONDON: 85, GRACECHURCH STREET, E.C.

IMPORTANT NOTICE TO MINE PROPRIETORS.

MR. GEORGE GREEN, ENGINEER, ABERYSTWITH, SUPPLIES MACHINES under the above Company's Patents for DRESSING all METALLIC ORES. Dressing-floors having these Machines possess the following advantages:—

1.—THEY ARE CHEAPER THAN ANY OTHER KIND IN FIRST OUTLAY.

2.—ONLY ABOUT ONE-FOURTH OF THE SPACE USUALLY OCCUPIED BY DRESSING-FLOORS IS REQUIRED.

3.—FROM 60 TO 70 PER CENT. OF THE LABOUR IN DRESSING, AND FROM 5 TO 10 PER CENT. OF ORE OTHERWISE LOST, IS SAVED.

4.—THEY ARE THE ONLY MACHINES THAT MAKE THE ORE CLEAN FOR MARKET AT ONE OPERATION.

They have been supplied to some of the principal mines in the United Kingdom and abroad—viz.,

The Greenside Mines, Patterdale, Cumberland; London Lead Company's Mines Darlington, Colberry, Nanthead, and Bollyhope; the Stonecroft and Greyside Mines, Hexham, Northumberland; Wanlockhead Mines, Abington, Scotland (the Duke of Buccleuch's); Bewick Partners, Haydon Bridge; the Old Darren, Esgairmwyn, and Ystumtuen Mines, in Cardiganshire; Mr. Beaumont's W.B. Mines, Darlington; also Mr. Sewell for Argentiferous Copper Mines, Peru; the Bratsberg Copper Mines, Norway, and Mines in Italy, Germany, United States of America, and Australia, from all of whom certificates of the complete efficiency of the system can be had.

WASTE HEAPS, consisting of refuse chats and skimpings of a former washing, containing a mixture of lead, blende, and sulphur, DRESSED TO A PROFIT.

Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middleton-in-Teesdale, by Darlington, writing on the 20th March, 1876, says—"The yearly profit on our Nanthead waste heaps amounted last year to £600, besides the machinery being occupied for some months in dressing ore-stuff from the mines. Of course, if it had been wholly engaged in dressing wastes our returns would have been greater; but it is giving us every satisfaction, and bringing the waste heaps into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines, Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much pleasure in stating that a full and superior set of your Ore Dressing Machinery has been at work at these mines for fully a month, and each day as the moving parts become smoother, and those in charge understand the working of the machinery better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply, and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines, says—"Your machinery saves fully one-half on old wages, and vastly more on the wages we have now to pay. Over and above the saving in cost is the saving in ore, which is a t much short of 10 per cent."

GREENSIDE MINE COMPANY, Patterdale, near Penrith, say—"The separation which they make is complete."

Mr. MONTAGUE BEALE says—"It will separate ore, however close the mechanical mixture, in such a way as no other machines can do."

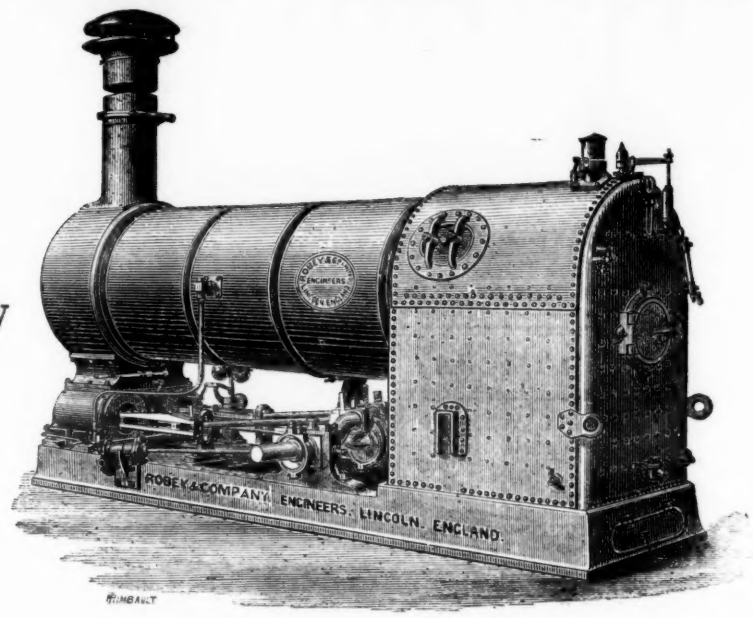
Mr. C. DODSWORTH says—"It is the very best for the purpose and will do for any kind of metallic ores—the very thing so long needed for dressing-floors."

Drawings, specifications, and estimates will be forwarded on application to—

GEORGE GREEN, M.E., ABERYSTWITH, SOUTH WALES.

ROBEY AND COMPANY'S
NEW DESIGN OF HORIZONTAL FIXED ENGINE AND LOCOMOTIVE BOILER COMBINED.

The Cost of all expensive Brick Buildings and Chimney is saved by this Engine.



The Boiler is specially arranged to burn saw-dust and refuse wood, and every description of inferior fuel, and thus economise Coal.

For full particulars and prices, apply to—

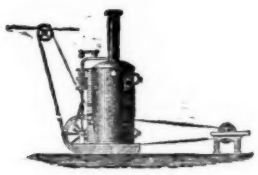
ROBEY AND COMPANY, ENGINEERS, LINCOLN, ENGLAND.

OFFICES,—117, CANNON STREET. LONDON

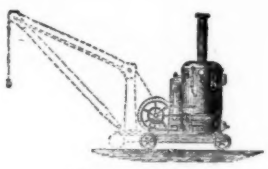
CHAPLIN'S PATENT PORTABLE STEAM ENGINES AND BOILERS.

(PRIZE MEDAL, INTERNATIONAL EXHIBITION.)

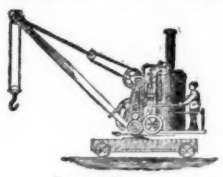
ALWAYS ON STOCK OR IN PROGRESS.



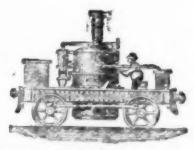
STATIONARY ENGINE. From 1 to 30-horse power. No building required.



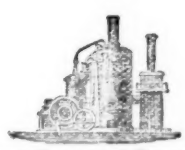
HOISTING ENGINE. 1 to 30-horse power. With or without Jib.



STEAM CRANE. 15 cwts. to 20 tons. For Wharf or Rail.



CONTRACTOR'S LOCOMOTIVE. 6 to 27-horse power. For Steep Inclines and Quick Curves.



SHIP'S ENGINE AND DISTILLER. For Winding, Cooking, and Distilling. Sanctioned by H. M. Government.

WINDING AND PUMPING ENGINE. 6 to 20-horse power.

Parties are cautioned against using or purchasing imitations or infringements of these patent manufactures.

PATENTEES AND SOLE MANUFACTURERS,

ALEXANDER CHAPLIN AND CO.,
CRANSTON HILL ENGINE WORKS, GLASGOW.

London House: M'KENDRICK, BALL, AND CO., 63, Queen Victoria-street, London, E.C.

PATENT

"INGERSOLL ROCK DRILL,"

LE GROS AND CO.

60, Queen Victoria Street, London, E.C.

5, PARK PLACE, NEW YORK, U.S.A.

We claim 40 per cent. greater effective drilling power, and offer to compete with any machine of its class.

See following extracts from the reports of Judges in awarding Medals:—

"2. Its simple construction ensures durability. &c.

"4.—The steamor ir cushions at each end of cylinder effectually protect from injury.

"5. Its having an automatic feed, giving it a steady motion, &c.

"6. Its greater steadiness and absence of jar and vibration experienced in other drills, which is very destructive to their working parts, &c.

"7. Its greater power is some FORTY PER CENT. in favour of the Ingersoll."

Medals awarded for several years in succession "For the reason that we adjudge it so important in its use and complete in its construction as to supplant every article previously used for accomplishing the same purpose."

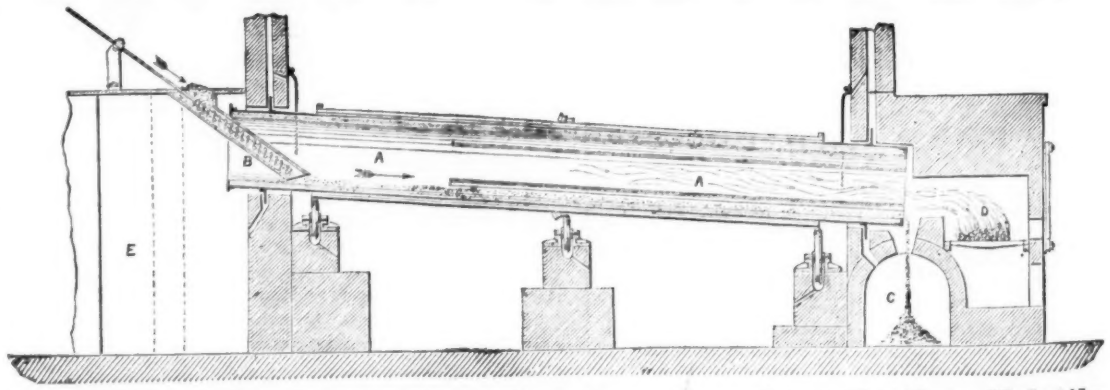
Estimates given for Air Compressors and all kinds of Mining Machinery. Send for Illustrated Catalogues, Price Lists, Testimonials, &c., as above.

Just published, Free Edition.

GUIDE TO HEALTH; or, ADVICE AND INSTRUCTIONS FOR THE CURE OF NERVOUS DEBILITY.—A New Medical Work on the Treatment of Local Debility, Consumption, Loss of Memory, Physical Depression, Indigestion, and all diseases resulting from loss of nerve power. Illustrated with cases and testimonials. Sent free for two stamps.—Dr. SMITH will, for the benefit of country patients, on receiving a description of their case, send a confidential letter of advice.

Address, Dr. H. SMITH, 9, Burton crescent London, W.C.

OXLAND AND HOCKING'S
PATENT CALCINER,



For Roasting Ores containing Sulphur, Arsenic, and other Volatile Matters, have been supplied to some of the principal Mines in the United Kingdom and Abroad.

For particulars, apply to—

Dr. OXLAND, 8, PORTLAND SQUARE, PLYMOUTH; or to
Mr. JOHN HOCKING, Jun., TREWIRGIE TERRACE, REDRUTH.

J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING CRADLEY STATION),

Manufacturers of

CRANE, INCLINE, AND PIT CHAINS,

Also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES and FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS, RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions.

STOURBRIDGE FIRE BRICKS AND CLAY.

Original Correspondence.

THE MINERAL PRODUCE OF THE UNITED KINGDOM.

Of the many statistical accounts annually published by the authority of the Government, there are few that possess more interest than the Mineral Statistics of the United Kingdom. The volume for the year 1875 is now before us, and is issued from the Mining Record Office, by Mr. ROBERT HUNT, F.R.S., who has been assisted in his labours by Mr. RICHARD MEADE and Mr. JAS. B. JORDAN, Assistant Keepers. The returns of our mineral produce were first collected and published for the year 1848, and at that period included the produce of the tin, copper, and lead mines in the United Kingdom. In the year 1853 an extension of the Mining Record Office took place, and its enquiries extended to the annual production of coal, iron ore, pig-iron, and other important industries; and since the year 1853 returns have been published year by year, each year assuming a more complete form.

The returns for the year 1875 cannot fail to be interesting to all connected with our extensive mining and metallurgical industries, especially as many of these industries have recently been more or less influenced by various disturbing causes, which it is not necessary here to enter upon.

The general summary of the returns of Mineral Produce of the mines of the United Kingdom for the year 1875 is contained in the annexed statement:—

Minerals.	Quantities.	Values.
Coal ... ... Tons	131,867,105 ...	£46,163,486
Iron ore	15,821,060 ...	5,975,410
Copper ore	71,528 ...	333,414
Tin ore (black tin)	13,996 ...	735,606
Lead ore	77,746 ...	1,202,148
Zinc ore	23,978 ...	75,110
Iron pyrites	48,036 ...	35,136
Arsenic	5,061 ...	31,174
Manganese	3,205 ...	15,906
Ochre and Umber	5,315 ...	7,185
Wolfram and Tungstate	46 ...	382
Plumbago	20 ...	*
Fluor spar	359 ...	188
Clays (porcelain and fire-clay) .	3,008,444 ...	753,957
Oil shales	442,336 ...	200,000
Salt	2,316,644 ...	1,158,322
Barytes	15,549 ...	14,089
Coprolites, &c	250,122 ...	628,000
Sundry minerals	— ..	3,500
Total value of mineral produced in 1875...		£57,333,013

* None sold.

COAL.—The first and most important of our mining industries claiming attention is that of our collieries. Turning to the pages of the Mineral Statistics, it appears that the total number of collieries in operation in the year 1875 in the United Kingdom amounted to 3933; this number includes the actual number of collieries, individual pits not being distinguished. The production of coal being, as previously stated in the summary, 131,867,105 tons. Ten years previously, in 1865, the collieries numbered 3256, and the output amounted to 98,150,587 tons—figures sufficiently indicating the development of our fossil fuel deposits. The following tabular statements shows the number of collieries and production of each district in the year 1875:—

Coal fields.	No. of collieries.	Quantities. Tons.
North Durham and Northumberland ...	170 ...	12,640,789
South Durham	177 ...	19,456,534
Cumberland and Westmoreland	39 ...	1,226,737
Cheshire	37 ...	658 945
Lancashire, North and East	400 ...	8,825,798
Lancashire, West	188 ...	8,250,246
Yorkshire	523 ...	15,425,278
Derbyshire	255 ...	7,091 325
Nottinghamshire	46 ...	3,250,000
Warwickshire	31 ...	799,750
Leicestershire	25 ...	1,154,619
Staffordshire, South, & Worcestershire	442 ...	10,251,791
Staffordshire, North	157 ...	4,456,213
Shropshire...	64 ...	1,229,785
Gloucestershire	90 ...	1,273,080
Somersetshire	40 ...	654,878
Monmouthshire	91 ...	3,525,975
North Wales	124 ...	2,337,308
South Wales	415 ...	10,632,597
Scotland, East	334 ...	11,419,619
Scotland, West...	232 ...	7,177,888
Ireland	53 ...	127,950
Total	3933 ...	131,867,105

Of this quantity there appears to have been exported to foreign countries a total of 14,544,916 tons; used in the manufacture of pig-iron, 15,645,774 tons—this is exclusive of the quantity employed in the malleable ironworks. While of coal sent coastwise the following appear as the quantities received at the various ports of England, Scotland, and Ireland in the year 1875:—

England ... ... Tons	7,055 121
Scotland	732,183
Ireland	2,591,185
Total	10,378,489

The coal brought into London alone by sea amounted in the year 1875 to 3,134,846 tons; by railway, 5,065,452 tons; by canal, 4594 tons—or a total for consumption in London alone of no less than 8,204,892 tons. Comparing the output of our collieries in the year 1875 with the production of the previous year there appears an increase of 6,823,848 tons. The actual increase of coal carried by railway and canal, and distributed throughout the country, as shown by the returns, and the increased quantities sent coastwise and exported in the year 1875 amounts to no less than 7,865,148 tons in the aggregate. The annexed summary shows the increase in the railway, canal, and over-sea distribution in the year 1875 over that of the previous year:—

Name of railway.	Increase. Tons.	Decrease. Tons.
ENGLAND AND WALES.		
Great Western	679,687 ...	—
Great Northern	411,556	—
North Eastern	469,031	—
Midland	1,014,131	—
London and North Western...	1,536,199	—
Manchester, Sheffield, and Lincolnshire...	431,582	—
Lancashire and Yorkshire	520,487	—
North Staffordshire...	—	6,974
Taff Vale	—	575,965
Neath and Brecon	34,694	—
Llynvi and Ogmore	93,523	—
Mid-Wales...	8,833	—
Maryport and Carlisle	—	22,905
Furness railways	—	6,246
SCOTLAND.		
Caledonian	499,418	—
North British	716,242	—
Glasgow and South Western	292,936	—
Total	6,711,319	612,090
Deduct decrease	612,090	
Increase of coal carried by the railways from which returns have been received	6,099,229	
Increase of coal, coke, and patent fuel exported ...	627,711	
Increase of coal, coke, and patent fuel sent coastwise	1,138,208	
The total increase	7,865,148	

Next in importance to coal comes our iron industries, the production of our iron mines, and the subsequent conversion of the ore thus raised into the crude metal.

IRON ORE.—The aggregate production of the ferruginous deposits of the United Kingdom amounted in the year 1875 to 15,821,060 tons, of the value of 5,975,410*l.*, and was raised from the following districts, including ore of all varieties:—

Counties, &c.	Quantities. Tons	Value. £
Cornwall	11,404 ...	6,891
Devonshire	10,594 ...	7,983
Somersetshire... ...	45,166 ...	33,186
Gloucestershire	111,826 ...	71,761
Wiltshire...	87,152 ...	21,688
Oxfordshire	34,568 ...	6,913
Northamptonshire... ...	1,085,899 ...	172,812
Lincolnshire	573,366 ...	101,266
Shropshire	240,568 ...	143,419
Warwickshire..	97,456 ...	48,720
Derbyshire	218,132 ...	85,835
Nottinghamshire	11,750 ...	7,344
Staffordshire, North ...	939,023 ...	680,791
ditto South ...	715,451 ...	399,820
Cheshire	1,500 ...	750
Lancashire	834,484 ...	625,863
Cumberland	1,147,968 ...	860,976
Yorkshire, North Riding.	6,121,794 ...	1,222,359
ditto West Riding.	353,582 ...	159,089
Northumberland... ... } Durham ... ... }	60,516 ...	37,017
North Wales	42,184 ...	21,092
South Wales and Monmouthshire ... ... }	495,840 ...	247,920
Scotland	2,452,235 ...	920,573
Ireland	128,602 ...	91,332
Total iron ore raised in the United Kingdom... }	15,821,060 ...	£5,975,410

In addition to the foregoing quantities the imported ores amounted to 458,693 tons, while the "purple ore," a residue from pyrites, the sulphur and copper being extracted, amounted to 280,000 tons, giving an aggregate total of iron ore from all sources of 16,559,753 tons for reduction in our metallurgical works.

PIG-IRON MANUFACTURE.—The returns of production for the year 1875 show a total of 6,365,462 tons, consuming in its manufacture 15,645,774 tons of coal. Compared with the yield of 1874 we have a considerable increase of no less than 374,054 tons of pig-iron; of this quantity the Cleveland district gave an increase in 1875 over 1874 of 81,769 tons, and Scotland during the same period of 242,323 tons. The number of furnaces in blast during the year 1875 was 629, of which 424 were in England, 86 in North and South Wales, and 119 in Scotland. In the subjoined abstract the returns of production of pig-iron appear for the years 1875 and 1874 for comparison, with the number of furnaces built and in blast in the first-named year:—

ENGLAND. Counties.	1875. Furnaces. Built.	In blast.	Pig-iron made. Tons.	1874. Tons.
Northumberland	4 ...	2 ...	22,870 ...	33,142
Durham	70 ...	53 ...	786,216 ...	829,235
Yorkshire, North Riding ...	85 ...	73 ...	1,240,243 ...	1,158,474
ditto West Riding...	50 ...	38 ...	267,153 ...	163,856
Derbyshire	51 ...	38 ...	272,065 ...	301,687
Lancashire	50 ...	31 ...	558,780 ...	488,672
Cumberland...	51 ...	31¾ ...	486,112 ...	390,840
Shropshire	26 ...	20 ...	120,996 ...	126,055
North Staffordshire	39 ...	26 ...	241,398 ...	273,501
South Staffordshire	155 ...	76¼ ...	470,540 ...	452,400
Northamptonshire	18 ...	12 ...	80,689 ...	53,780
Lincolnshire	21 ...	14 ...	111,683 ...	67,266
Gloucestershire	10 ...	6 ...	27,088 ...	43,139
Wiltshire	4 ...	2 } ...	...	
Hampshire	1 ...	0 } ...	32,731 ...	35,115
Somersetshire	1 ...	1 } ...	...	
Total of England	636 ...	424 ...	4,718,554 ...	4,417,139
WALES. North Wales.				
Denbighshire	9 ...	6 } ...	55,099 ...	51,868
Flintshire	2 ...	1 }		
South Wales.				
Anthracite furnaces	13 ...	7 ...	29,889 ...	23,760
Bituminous Glamorganshire ..	78 ...	35 ...	249,647 ...	330,484
coal districts. Monmouthshire ...	62 ...	37 ...	262,253 ...	360,480
Total of Wales...	164 ...	86 ...	596,908 ...	766,592
SCOTLAND.				
Ayrshire	43 ...	33 ...	358,164 ...	240,667
Lanarkshire...	94 ...	74 ...	631,495 ...	501,541
Fifeshire	6 ...	2 } ...	48,741 { ...	13,654
Linlithgowshire	9 ...	5 }		35,778
Stirlingshire } Argyleshire }	7 ...	5 ...	16,600 ...	15,837
Total of Scotland	159 ...	119 ...	1,050,000 ...	807,677

A summary of the foregoing returns for the year 1875 gives the respective production of pig-iron in England, Wales, and Scotland as follows, to which is appended the quantity of coal used in its manufacture:—

	Pig-iron.	Coal used.
England	4,718,554 ...	11,391,646
Wales...	596,908 ...	1,304,128
Scotland	1,050,000 ...	2,950,000
Total	6,365,462 ...	15,645,774

The prices of pig-iron do not exhibit any very considerable variation during the year 1875; of the following varieties the prices at the place of manufacture (per ton) have fluctuated to the extent appearing in the subjoined statement:—

	Average.	Highest.	Lowest.
Wales	£4 4 11 ...	£4 5 0 ...	£4 2 0
Scotland	3 4 0 ...	3 16 6 ...	2 18 3
Cleveland	3 0 0 ...	3 5 0 ...	2 14 0
Shropshire	4 18 0 ...	5 5 0 ...	4 10 0

THE MILLS AND FORGES AND MALLEABLE IRONWORKS.—These important adjuncts in our iron manufactures number 314 works, giving an aggregate of 7575 puddling-furnaces and 909 rolling mills. Of this number Scotland appears to possess 19 works, containing 337 puddling furnaces and 48 rolling mills.

BESSEMER STEEL WORKS.—The number of these works in Great Britain, in 1875, amount to 22; in glancing over the list it would appear that the works of the Mersey Steel and Iron Company, at Liverpool, possess the greatest capacity for production, having 10 converters of 5 tons capacity, equal to 50 tons; the important works of Sir John Brown, at Sheffield, with 6 converters and an aggregate capacity of 46 tons comes next, and is followed by the Messrs. Chas. Cammell and Co.'s works, with 8 converters, and a united capacity equal to 40 tons.

TIN-PLATE MANUFACTURE.—The total number of boxes of tin, terne, and black plates made in the works of the United Kingdom, 68 in number, in the year 1875, amounted to 2,952,116, of this total actual returns were received for 1,601,516 boxes, the actual weight of which was equal to 82,490 tons, the balance of production being ascertained by gentlemen connected with the tin-plate manufacture. The exports of tin-plate in the year 1875 reached 2,448,986 boxes, against 2,143,468 boxes in the previous year. While of the exported quantities the United States received 95,995 tons, valued at 2,541,004*l.*, the total exports in weight amounting to 138,563 tons, of the value of 3,691,382*l.*

COPPER ORE AND COPPER.—There appears to have been 100 mines in the United Kingdom raising copper ore in the year 1875, the average price per ton being 5*l.*; in the previous year it did not exceed 4*l.* 5*s.* The aggregate quantity of ore raised amounted to 71,528 tons, yielding of metallic copper 4322 tons; compared with 78,521 tons of ore, and 4981 tons of metallic copper in the previous year. In the subjoined statement appears the production of each district in the United Kingdom in 1875:—

	Copper Ore. Tons	Copper.
ENGLAND—Cornwall ...	39,393 ...	2,698
Devonshire...	14,097 ...	1,007
Cumberland	142 ...	10
Lancashire	1,373 ...	110
Cheshire	8,336 ...	85
WALES—Cardiganshire	79 ...	5
Carnarvonshire	127 ...	9
Anglesea	4,612 ...	126
Merionethshire	16 ...	1
Montgomeryshire	55 ...	4
IRELAND	3,125 ...	255
Regulus, precipitate, &c.*	173 ...	12
Total of United Kingdom ...	71,528 ...	4,322

* From Cornwall and Devonshire, sold at Ticketings.

The value of the copper ore amounted in the aggregate to 333,414*l.*, that of the copper to 388,984*l.* In the London market the prices of metallic copper of the following varieties fluctuated, as shown in the annexed abstract, giving the highest, lowest, and average price per ton:—

Description of copper.	Highest.	Lowest.	Average.
Best selected	£93 10	£87 5	£90 0
Tough cake and tile	91 10	85 5	88 9
Sheathing and sheets	96 10	90 10	90 8
Australian	93 10	89 10	91 6
Old copper	86 0	80 0	81 17

In addition to the above quantities of copper ore and copper, there was imported into the United Kingdom of ore and regulus of copper 566,506 tons; this quantity, when smelted, yielded 29,483 tons of copper, these quantities include the ore—colonial and foreign—sold at ticketings and by private sale, also burnt ore, containing copper in small proportion, and obtained from pyrites.

TIN ORE AND METALLIC TIN.—The produce of the mines and stream works of Devon and Cornwall, in which counties alone these important deposits occur, amount, according to the returns before us, to 13,995 tons of (black) tin, the produce of 183 mines, yielding 9614 tons of metallic (white) tin; the value of the above ore is stated to be 735,606*l.*, while the value of the metal amounted to 866,266*l.* Compared with the published returns for 1874, there appears a falling off in the ore of 44 tons, and in the metal produced of 328 tons. The average price of the ore (black tin) during the year 1875 was 52*l.* 11*s.* 6*d.*, in 1874 it was 56*l.* 3*s.* The metallic (white) tin was subject to considerable fluctuation in price per ton during 1875, ranging from 81*l.* 10*s.* to 102*l.*, the average taken from all the weekly sales in the London market of English blocks being 90*l.* 2*s.* Subjoined is the average, highest, and lowest prices of foreign and colonial tin, in the London market, during the same year:—

Description of tin.	Average.	Highest.	Lowest.
English blocks	£90 2	£102 0	£81 10
Banca	90 0	102 0	79 10
Straits	84 12	96 0	76 10
Australian	83 2	94 0	74 15

IMPORTS OF TIN.—Of metallic tin imported in 1875, amounting to 16,788 tons, the Australian colonies furnished 7210 tons; in 1874, 5800 tons.

LEAD ORE, LEAD, AND SILVER.—The lead mines of the United Kingdom selling ore in the year 1875 numbered 304, producing of ore 77,746 tons, and of metallic lead 57,435 tons, the yield of silver being ascertained as 487,358 ozs. The prices of ore during the year, rejecting a few low and high price parcels, appear to have been ascertained, as given in the annexed statement, showing the highest, lowest, and average prices per ton:—

Highest price	£19 11 6
Lowest price	13 10 6
Average price	15 9 3

The prices of English pig and sheet lead per ton in the London market, being the average of each week in the year 1875, is seen in the subjoined abstract:—

Description of lead.	Highest.	Lowest.	Average.
English pig	£23 12 6 ...	£21 0 0 ...	£22 9 4
ditto sheet... ...	25 0 0 ...	22 10 0 ...	23 13 8
English pig, W.B....	24 5 0 ...	22 0 0 ...	23 6 6
Patent shot	27 0 0 ...	26 0 0 ...	26 7 6

The total value of the lead ore, computed from the above table of prices, amounted to 1,202,148*l.* The metallic lead obtained from the ore represents a total value of 1,290,373*l.*, the value of the silver amounting to 115,747*l.*

The following statement presents at a glance the produce of each lead-producing district in 1875, distinguishing the lead ore, lead, and silver obtained therefrom:—

Counties.	Lead ore. Tons cwts.	Lead. Tons cwts.	Silver. Ozs.
ENGLAND—Cornwall	2,566 10 ...	1,932 2 ...	25,681
Devonshire	335 4 ...	242 3 ...	4,542
Somersetshire	1,546 5 ...	454 18 ...	—
Derbyshire...	2,283 5 ...	2,090 12 ...	—
Shropshire...	7,923 5 ...	6,039 0 ...	4.384
Cumberland	2,128 4 ...	1,553 17 ...	12,628
Yorkshire...	4,049 16 ...	2,945 10 ...	7,438
Westmoreland	1,646 5 ...	1,106 11 ...	16,114
Durham and Northumberland..	22,304 4 ...	16,525 7 ...	70,191
WALES—Brecknockshire	11 0 ...	7 15 ...	—
Cardiganshire	5,835 0 ...	4.401 17 ...	46,624
Carmarthenshire	442 17 ...	332 10 ...	1,327
Radnorshire	58 0 ...	52 10 ...	—
Pembrokeshire	80 0 ...	67 10 ...	669
Montgomeryshire	8,940 10 ...	6,717 17 ...	64,981
Merionethshire...	175 0 ...	135 0 ...	656
Denbighshire	2,600 18 ...	1,954 7 ...	10,873
Flintshire	3,003 16 ...	2,214 17 ...	12,699
Carnarvonshire...	1,408 3 ...	1,046 4 ...	4,789
ISLE OF MAN	4.429 0 ...	3,158 10 ...	183,524
IRELAND	1,850 8 ...	1,387 18 ...	6,935
SCOTLAND	4,109 14 ...	3,078 10 ...	13,303
Total of United Kingdom ...	77,746 4 ...	57,435 5 ...	487,358

In the previous year the returns stood as follows:—

Lead ore ... ...Tons	76,201 ...	...	£1,024,107
Lead	58,777 ...	...	1,298,463
Silver ... ...Ozs.	509,277 ...	...	127,389

Comparing the returns of the two years, it appears that the ore smelted in 1874 contained a greater percentage of metallic lead than that treated in the year 1875. In the last-named year 135 tons of ore was required to make a ton of lead, while in 1874 but 130 tons was the quantity employed.

IMPORTS AND EXPORTS OF LEAD.—The total imports of lead ore in the year 1875 was 11,916 tons; of lead, pig, and sheet, 79,825 tons; and of lead manufactures, 347 tons; the exports of British lead in the same year being of pig-lead 24,271 tons, and of lead rolled, sheet, piping, and tubing 11,127 tons.

ZINC ORE AND METALLIC ZINC.—The total production of zinc ore, principally the "sulphide of zinc," from the mines in the United Kingdom amounted in the year 1875 to 23,978 tons, valued at 75,110*l.* The zinc ore yielded an average of 28 per cent. of the metal, amounting to 6713 tons, of the value of 162,790*l.*, being at the rate of 24*l.* 5*s.* per ton. The prices of the ore varied according to quality, from 2*l.* 17*s.* 10*d.* to 5*l.* 0*s.* 10*d.* per ton, the average price being 4*l.* 2*s.* 3*d.* per ton. The metal in the London market varied as follows during the year:—

	Spelter.	Zinc (in sheets).
Highest price	£25 10 0 ...	£32 15 0
Lowest price...	22 17 6 ...	29 0 0
Average price	24 5 0 ...	30 14 6

The following abstract shows the summary of production of the zinc mines in the United Kingdom in the year 1875:—

Counties.	Zinc ore. Tons	Value.
ENGLAND—Cornwall ... ...Tons	3,086 19 ...	£ 9,456 18 10
Cumberland and Northumberland	1,050 13 ...	3,454 0 0
Derbyshire	150 0 ...	300 0 0
Shropshire	836 12 ...	3,552 0 0
WALES—Cardiganshire	50 4 ...	152 0 0
Carnarvonshire	414 0 ...	1,344 15 0
Denbighshire	1,920 0 ...	8,473 11 9
Flintshire	1,949 17 ...	6,884 0 0
Montgomeryshire	2,330 16 ...	4,599 14 1
Radnorshire	48 14 ...	246 2 10
Sundries	170 0 ...	680 0 0
ISLE OF MAN	11,898 0 ...	35,685 0 0
SCOTLAND	62 13 ...	282 1 1
Total ... ...Tons	23,978 8 ...	£75,110 3 7

IMPORTS AND EXPORTS OF ZINC.—The total imports of zinc ore in the year 1875 amounted to 21,854 tons, against 22,193 tons in the previous year; of crude zinc, 22,638 tons in 1875, against 21,355 tons in 1874; and of 15,232 tons of zinc manufactures in 1875 against 12,645 tons in the previous year, the principal imports coming from Italy, Holland, Germany, Belgium, and Spain. The total exports of British zinc or spelter, in 1875, appears as 4896 tons, valued at 116,588*l.*, compared with 3792 tons, of the value of 94,490*l.*, in the previous year.

IRON PYRITES.—The production of the sulphur ores—mundic—of

the United Kingdom, in 1875, amounted to 48,035 tons, of the value of 35,136*l.*, produced in the following districts, in the quantities given in the annexed table.

Counties, &c.	Sulphur ores, &c.	Value.
ENGLAND—Cornwall ... ...Tons	7,223 2 ...	£ 4,054 10 5
Devon	2,498 15 ...	2,717 4 1
Durham and Northumberland ...	1,520 0 ...	760 0 0
Lancashire	2,580 0 ...	1,290 0 0
Staffordshire	2,750 0 ...	1,375 0 0
Yorkshire	2,500 0 ...	1,250 0 0
Sundries...	10,500 0 ...	5,600 0 0
WALES—Carnarvonshire	1,250 9 ...	937 0 0
Merionethshire	29 0 ...	15 0 0
Anglesea	651 9 ...	463 0 11
Ireland...	16,533 0 ...	16,674 15 6
Total	48,035 16 ...	£35,136 10 11

METALS OBTAINED FROM THE ORES PRODUCED IN THE UNITED KINGDOM IN THE YEAR 1875.—This information appears in the following summary of metals produced and the value according to prices current in the same year:—

Gold ... ...Ozs.	579 ... £	2,105
Pig iron... ... ...Tons	6,365,462 ...	15,645,774
Copper	4,322 ...	388,984
Copper and silver precipitate	54 ...	3,207
Tin	9,614 ...	866,266
Lead	57,435 ...	1,290,373
Zinc...	6,713 ...	162,790
Silver ... ...Ozs.	487,358 ...	115,747
Other metals, estimated	— ...	1,500
Total value of metals produced from the ores of the United Kingdom		£18,476,746

As in former years so in 1875 the total value of the mineral and metallic production of the ores and mines of the United Kingdom is given, it will be seen in the annexed table of the total value of the metals, coal, and other minerals that there is a diminution to the extent of 346,625*l.* when comparing the values in the two years:—

	1875.	1874.
Metals—value of	£19,539,070	£18,476,746
Coal	45,849,194	46,163,486
Minera's—earthy, &c. ...	2,446,049	2,847,456
Total value	£67,834,313	£67,487,688

Beyond the information contained in the foregoing tables there are useful and complete details bearing on the imports and exports of the various metals in 1875. These are most valuable to those connected with our metallurgical industries, and there will also be found complete lists of the ironworks, mills, and forges, and Bessemer converting works, with an appendix, in which is given a complete directory to our metal mines and collieries, with detailed information showing the situation of the mines, the minera's raised, the owners and principal agents and managers—as well as a list of clay-works and smelting and metal extraction works in the United Kingdom.

MINING IN QUEENSLAND.

SIR,—I have had some trouble in completing my return of the total tin produced in New South Wales and Queensland tin fields at Stanthorpe during the first half of this year; I yesterday received the last return, and now give your readers the result, as follows:—

1876—TOTAL YIELD OF TIN.—1ST QUARTER.

	Stream tin.	Ingot tin.	Total.
	Tons c. qr. lbs.	Tons c. qr. lbs.	Tons c. qr. lbs.
Via Warwick (rail) ...	1026 3 1 7	15 10 1 22	1041 13 3 1
Murrundi (rail)... ...	700 0 3 25	—	700 0 3 25
Grafton (port)	478 0 0 0	13 0 0 0	491 0 0 0
Total, 1st quarter ...	2204 4 1 4	28 10 1 22	2232 14 2 26
2ND QUARTER.			
Via Warwick	849 17 3 7	7 17 1 12	857 15 0 19
Murrurundi	506 0 3 25	—	506 0 3 25
Grafton...	485 9 1 4	13 0 3 12	498 10 0 16
Total, 2nd quarter...	1841 8 0 8	20 13 0 24	1862 6 1 4
Total for half year...	4045 12 1 12	49 8 2 18	4095 1 0 2
Do., 1st half of 1875.	4086 11 1 24	24 11 3 17	4111 2 3 23
Do., 1st half of 1874.	5763 19 0 2	—	5763 19 0 2

On comparing these three half years we find that there has been a slight increase in production during the past half year as against the previous half year (1875) of pure tin—*i.e.*, that the yield of the 1875 half year, at 68 per cent.=2803½ tons pure tin; while the past half year, at 70 per cent. = 2884½ tons pure tin, an increase of nearly 80 tons pure tin; while the same half year of 1874, calculated at 63 per cent., yielded 3630½ tons pure tin, or 827 tons more than the same half year in 1875, and 746 tons more than the past half year (1876). There is no doubt of the return I now send you being correct. The Warwick returns I have sent you every month, and the Murrurundi return is the Government one—in fact, semi-official; while the exports to Sydney, *via* Grafton, are made up from a return kindly supplied to me by the managers of the two steamship companies that ply between Grafton and Sydney. We, therefore, must come to the conclusion that the enormous reduction in the price of tin has had no effect whatever on the production of Australian tin. Whether the whole of this tin will ultimately be thrown upon the London market is another question which I am enquiring into, but cannot yet solve. Every effort, I know, has been made to find a market for ingot tin both in China, India, and California; how far the shipments have succeeded, and how much is likely to be drawn to any of these markets, is a matter I must treat in a future letter, but that our production here has not fallen off is a strange and ominous fact.

With this fact must also be considered the additional yield of the Tasmania mines, which yield must somewhat affect the London market in about five months from hence. The Tasmanian mines are all large rich lodes of ore, certain and permanent, while the Stanthorpe tin field is altogether stream tin, and therefore patchy, and supply precarious. Present prices have reduced the number of hands at work, and the number of claims also, but against this there must have been some runs of very rich ground, or the production could not have been kept up. The tin received at the Warwick Railway Station during the past two months has been as follows—

	Stream tin.	Ingot tin.	Total.
	Tons c. qr. lbs.	Tons c. qr. lbs.	Tons c. qr. lbs.
For July	... 266 7 1 20	—	266 7 1 20
For August	... 433 13 3 3	5 4 3 20	488 18 2 23
Total	... 700 1 0 23	.... 5 4 3 20	705 6 0 15

Showing an increase of over 30 tons stream tin on the corresponding two months of 1875.

In other metals there is little new to report. The Great Northern gold fields are turning out as rich as heretofore; machinery is being got up as fast as it can be supplied, and enormous yields from the reefs have been got and are anticipated. Melbourne capital is largely invested, and next winter will see a busy time there. The present season is now almost over; hundreds must return south during the coming summer, to return north again as the winter sets in.

Brisbane, Sept. 26. —— RESIDENT.

TECOMA SILVER MINING COMPANY.

SIR,—In reply to the letter which appeared in last week's Journal, signed "Blighted Hopes," I beg to deny any complicity in the production or circulation of the "directors' report" dated the 18th inst. The four gentlemen—Messrs. Adley, McLeod, Romaines, and Nelson—who, with Messrs. Frames, Walker, and myself were elected directors, have not permitted me the opportunity of taking part in any of their proceedings, consequently I knew nothing of the so-called directors' report until, in common with all the other shareholders, I received a copy.

The action of these four gentlemen in ousting the other three on the ground that their election was invalid is certainly most remarkable, as the Companies Act, 1862, has provided for the only ground of disqualification alleged for such action. Section 67 of that Act says—"All appointment of directors, managers, or liquidators shall be deemed to be valid, and all acts done by them shall be valid, notwithstanding any defect that may afterwards be discovered in their appointment or qualification."

No doubt some of the numerous subscribers and readers of your valuable Journal are well acquainted with the law of joint-stock companies, and could throw some light on the legal point raised, which is one of considerable interest to shareholders generally.

It will be noticed that the achievements of our new board were rather understated, they having practically got rid of three instead of two of their colleagues. If "Blighted Hopes" will communicate with me I shall be happy to hand him a copy of the correspondence which has passed between myself and the board on the subject, which he is quite at liberty to publish.

I presume the secretary overlooked the importance of sending you a copy of the said directors' report, so beg to enclose mine.

London, Nov. 30. —— G. WINGFIELD.

FUTURE OF MINING IN PERU AND CHILI.

SIR,—Whilst residing in Peru, some six months since, I drew the attention of the Government and the late President of the republic to the defective state of the mining laws, especially as he was most desirous and anxious that British and United States capital should be attracted towards Peru. I spoke plainly to him, informing him that it would be impossible to induce the English public to enter into any mining business in Peru—that no guarantee existed in the present mining laws or security to title deeds. His Excellency then requested me to write in the official paper of the Government—the Opinion Nacional—and state the class of reform that would be likely to induce the British public to turn their eyes towards Peru. I published several letters, and was fortunate enough to convince the country of the absolute necessity of doing away completely with the old *ordenanzas* of Spain. The greatest proof I gave was that old Spain herself had changed her laws, to the complete satisfaction of the British public, and the result was that several millions of British money had found its way into Spain, and this only within the last six years. Since I left Peru I have also busied myself considerably in the same direction here. His Excellency the President of Chili having summoned me to an audience, the result was that he likewise appeared well pleased with the letters I had published, and he said he would do all in his power to change the present mining laws of Chili, so as to attract English capital to the republic. I have been on the move continually since I reached this country, inspecting most of the mining districts of Chili. I am at present in one of the northern provinces. I have recently returned from a trip to the Andes, and close to the Argentine Republic. I shall inspect the Condes mining district before leaving for London, which I hope to do in about two months, *via* Panama and New York. I have to enquire as to how a little operation of ours (H. and J. Sewell) "pans out" in New York—the celebrated Amazonian Gold Mine, a printed report of which I forward for publication in the Journal, which appeared in the Chilian Times of Valparaiso. I here also enclose the last news from Peru as to the reform of the mining laws, taken from the Callao Times. I shall soon be able also to give you good news from Chili. I believe I have come across something which may surpass the Condes district—no snow, and can be worked all the year round. However, as to this I will address you later on, and allow facts to determine how far I am right as to my conclusions. I must come across some good sound things in Chili, for I am on the move, and have been for the last three months, and will continue travelling and inspecting mines for another two months. I likewise enclose the measures already taken by the Peruvian Government, and published in the English newspaper of Callao—the Pacific Times—which oblige me by publishing the week after this letter and printed matter I enclose have been made public.

HENRY SEWELL, M.E., F.R.G.S.

Serena, Province of Coquimbo, Chili, Oct. 9.

ERRATA.—In the letter that was published in the Journal of July 22, headed the "Comstock and Emma Veins," there was a great jumble of words with no meaning—a mistake of the compositor. I will quote it as it stands—"These things were me at a time when even the mention of an American Mine was asserted by looked upon as something blasphemous." It should be—"These things were asserted by me at a time when even the mention of an American mine was looked upon as something blasphemous." —— HENRY SEWELL, M.E.

PERU—REFORM OF THE MINING LAWS.—The political disturbances of which we gave an account in our last edition have now entirely subsided, and even the debates in Congress appear to partake of the calm which has fallen upon the whole people. Declarations of adhesion to the Government continue to arrive from the interior, whilst the executive appears to be doing its best to govern without making a show of governing. No measures have yet been introduced by it into Congress, and it almost seems a blessing that such is the case, since members are pouring in proposition after proposition, and bill after bill, of which only a few are really requisite or likely to be of immediate benefit. Nearly six weeks have now elapsed and nothing has been done, notwithstanding the enormous daily expense of this institution to the country. Some of the items of the Budget have been passed, but as these may be brought up for re-consideration before the end of the session they cannot be considered to be definitely settled. One of the best measures introduced up to the present contains several marked modifications of the old mining ordinances—and, should it pass, the operations of miners will be much less restricted than at present, whilst titles to property will be so clearly defined that a continuance of the system of black-mailing discoverers will become impossible.

THE "AMAZONAS" GOLD MINING COMPANY—A CALIFORNIAN GOLD GRAVEL COMPANY.—It seems probable that the question whether or not payable gold exists in Chili will soon be set at rest. Closely following the Catapilco enterprise, of which so much has been said, we hear of another move in the same direction, Messrs. Henry and John Sewell having contracted for the formation of a company for the Amazonas Gold Quartz Mine, with Dr. A. P. Burns, of the Catapilco Gravel Company, under the following conditions:—Dr. Burns shall form a company for not less than $1,000,000; $100,000 cash shall be paid on the delivery of the mine to the company, $100,000 to be spent in erecting a 40 stamp mill, and $400,000 is to be paid in unassessable stock to the owners. The company's part will represent half the stock (say, $400,000, in assessable shares, and $100,000 cash for the stamp mill).—Dr. Burns will form the company in the Eastern States, where he has influential and rich connections, and where the laws permit not assessable stock. The following is the report on the mine:—

SITUATION.—These mines are situated some 30 miles to the north of Valparaiso, the principal seaport of the Republic of Chili. They are reached part of the way by rail from the above port, and the rest by stage coach, occupying in all some five hours. The distance from the Ligua, the capital of the province of that name, is about four miles, and about seven miles from the shipping port of Papudo, with a good cartroad to the mines. The freight for coal from the port of Papudo would range from 5 to 7 cents for each quintal of 100 lbs. The price of 1 ton of Chilian coal placed at the mine would be at the highest $7 per ton. There is also a good deal of wood fuel, but it is better to rely on coals. The distance from the Catapilco Gold Gravel Mining Company of San Francisco to these mines I calculate to be about six miles.

WATER SUPPLY.—This is an item of great importance in gold quartz mining, especially in Chili, for some of the richest gold quartz mines are situated in barren districts, the distance to water often exceeding 50 miles. The small river of the Ligua is fed direct from the snows of the Andes, and even at the dryest periods carries sufficient water to supply several quartz mills. The mines are about ½ mile from a ditch 5 ft. wide, carrying about 18 in. depth of water, which is fed by the river of the Ligua.

GEOLOGICAL FORMATION is talcose clayslate, considerably silicified, in many spots being completely metamorphosed into quartz. This slate resembles very much the talcose clay slates I have seen in the gold mines of California and Mexico, in which formation I have inspected some of the richest gold mines in the world, and also resembles some of the Peruvian gold mines worked by the Incas, which I likewise inspected not long since.

THE VEIN, or reef, consists of an immense quartz lode, varying from 25 to 60 ft. in width, and with a direction of north east and south west, and dipping west at an angle of about 50° to 70°. These mines were worked by the original conquerors of the country, and continued to produce large quantities of gold till within fifty years since, when they were abandoned, as the owners could not master the water, which was then brought to surface on men's backs in goats' hides, no pumps or buckets ever having been employed by them.

The proofs of the immense riches produced at one time to the Spaniards by this mine are twofold. It was found stated in the archives of the capital of Chili that this mine paid as much some years as $200,000 to the Viceroy as the Government dues. Then the immense quantity of dumps or refuse ores left by the Spaniards at the mines, extending for a length of one mile, of which there cannot be less than 25,000 to 30,000 tons at surface, which average not less than from $12 to $15 per ton. The average of the fire assays made were 0·489 ozs. of gold per ton, 1·469 ozs. of gold per ton, and 0·947 ozs. of gold per ton. But this, it must remembered, is the refuse rock left by the Spaniards, and this rock appears to have been picked over several times, which proves how rich the better class ore produced by the mines must have been. It was also proved that the gold contained in the refuse ore was fine gold containing hardly any iron pyrites. More than 100 native assays were made in my presence during several days residence at the mines. These native assays consist of grinding the quartz in mortars, and simply washing the quartz off in a "poruna," made out of an oxhorn cut into half lengthways. Almost every assay produced fine gold in the poruna, proving that these ores can be amalgamated very easily, and would return over 90 per cent. of the assay value I am confident. These mines have been worked to a depth of some 50 to 60 metres, but at surface the length of the workings exceed a mile. Drainage works up to nearly that depth were made by the Spaniards in the shape of a long adit, but the configuration of the hill prevents any deeper adits being made, except at a distance of a mile from the lode. The best plan of working these mines is to make a main shaft about 100 metres in depth, to cut below all the old workings, leaving about 40 metres of stoping ground above the bottom of the shaft. A small steam engine and pump would be required for this operation.

IMPORTANT FUTURE.—It is proved and generally admitted by various old workmen and respectable people of the Ligua, that at the time the Spaniards were obliged to abandon the mines, some 60 odd years back, in consequence of not being able to master the water, that three levels were left in bonanza carrying visible gold, and assaying about 7 to 8 ozs. to the ton; therefore, a place has already been selected for commencing a shaft, opposite the spot where the old miners—one of them close on 80 years of age—have pointed out that the three levels exist in bonanza, and which can be reached in eight months by sinking a shaft and cross-cut. This cross cut would have to be made from about the depth of 70 metres in the new shaft to cut into the vein close to those rich levels.

PRESENT PROFITS.—Estimating the dumps to produce only $12 per ton of fine gold, a 25-ton stamp mill would give daily about ($7 per ton clear) $175, equal to $1250 per month, or about $50,000 a-year clear profit for about some three to four years.

FUTURE PROFITS.—By erecting a stamp-mill with 100 heads the dumps or refuse portion at surface could be worked up in about a year, and would produce about $250,000 net profit for the first year. However, as soon as the mine is worked and ores taken from the levels above water, as well as the three levels reached which are in bonanza, I calculate the profit can be made to reach $100,000 a year.

It must be borne in mind that no stamping apparatus has ever been used anywhere near these mines, or any class of machinery, not even an ordinary horse-whim, therefore the Spaniards seldom worked ores below 3 ozs. per ton, as their rude system of grinding in trapiches or stone mills could only be carried out in a small way, grinding at most 4 tons per day: therefore, they only worked the richest rock, leaving, as they have done, piles of ort carrying from $12 to $20 per per ton at surface.—*Chilian Times.* HENRY SEWELL, M.E., F.R.G.S.

NEW BENSBERG MINING COMPANY.

(DIE NEUE BENSBERG BERGWERKS AKTIEN GESELLSCHAFT.)

GEEHRTER HERR! In Ihrem geschätzten Blatte vom 11 November ist in dem Prospectus der New Bensberg Mining Company und in einem diese Gesellschaft empfehlenden Artikel ein Professor Heusler von hier als the German Government Mining Inspector genannt; Ich ersuche Sie ergebenst in Ihrem zunachst erscheinenden Blatte gefälligst bemerken zu wollen das ein Professor Heusler hier nicht existirt dass ich daher unzweifelhaft mit dieser Person gemeint bin, indess die mir ein Capt. Craze in dem Mund gelegte Aeuszerung über die Gruben der New Bensberg Mining Company niemals gemacht und keine Veranlassung, noch weniger aber einen Auftrag gegeben habe dieselben öffentlich zu empfehlen.

Hochachtungsvoll, HEUSLER.

Bonn, Nov. 13. —— Königl. Preuss. Oberbergrath.

ON THE ORIGIN OF METALS.

SIR,—The importance of the question of the origin of minerals and the formation of mineral lodes or veins, especially with regard to the origin of the precious metals and the formation of argentiferous and auriferous lodes, commented on by your valued correspondents, Messrs. F. W. Mansell and Co., in the Journal of Nov. 25, will, I trust, be deemed by you a sufficient excuse for my making a few remarks on the subject.

Your correspondents say that the "igneous theory" has been pretty generally "exploded among scientists and miners." Now, in one sense this is true if by "igneous theory" be meant the filling of the veins with minerals, in the same way as a dyke of basalt or lava has been filled by volcanic agency. But it must be remembered that hot mineral springs, having various minerals and metals combined with them in a state of solution, are in another way the effect of volcanic or igneous agency, just as much as the injection of basalt or lava is. The Geysers of Iceland are well known to bring from the bowels of the earth silica in a state of solution, and that it becomes deposited at the surface. Now, my conviction is that all mineral veins have been filled from below, including the argentiferous and auriferous lodes, and that the ribbon-like pattern which so often occurs in mineral veins can only be accounted for in a chemical way, though still having its origin in volcanic agency.

The proximity of all the great silver veins, such as those in Nevada, Mexico, and Hungary, to outbursts of porphyry, syenite, and granite—in fact, these rocks forming the walls of the massive veins in those countries—prove to me beyond doubt the igneous or volcanic origin of the entire formations, including the veins contained in them. JAMES ARTHUR MORGAN, F.G.S.

47, *Finsbury-circus, London, Nov.* 30.

THE PNEUMATIC STAMPS.

SIR,—Having had numerous enquiries to which I am unable singly to furnish the desired particulars respecting the performance of Mr. Husband's Pneumatic Stamps, which have now been in regular operation at these mines during the past ten months, I have extracted the following statement from the books, trusting that as the subject is one of the greatest importance to tin mines you will kindly find space for a few remarks in the Journal. The average monthly cost of working the pneumatic stamps for the past ten months has been—

Coal, 12 tons 12 cwts., at 18s. 6d....	£11 13 1
Tallow, 30 lbs., at 5½s.	0 14 6
Oil, 5½ gallons, at 4s. 6d.	1 4 9
Grates	0 16 6
Yarn	0 0 8
Hemp...	0 2 4
Shagg...	0 0 8
Leather	0 2 0
Coatings, 3 cwt. 1 qr. 20 lbs., at 11s.	1 17 9
Total	£16 12 3

The quantity of stuff stamped monthly has been 400 tons, working by day only (10 hours), owing to an insufficient supply of water; consumption of coal per ton of stuff 2 qrs. 14 lbs., but I calculate that not less than 2 cwt. of coal per day is wasted by damping up the fire by night, therefore the actual coal consumed in performing the work is about 2 qrs. per ton of stuff stamped. The pneumatic pistons have been packed once in three months, at a cost in leather of about 2s. each, which is done by the engine-man in about half-an-hour, and with this exception, during the whole period, there has been no occasion to stop for repairs of any kind. At this moment the stamps are in quite as good condition as when we commenced ten months since, and, in fact, I have no doubt it is capable of working constantly for an indefinite time, without anything beyond the most trifling repairs, the whole machine being so simple that there is nothing to go out of order, and in point of durability there is little left to be desired.

Compared with the old form of stamps the saving will be about one-half in cost of erection. The duty of the old stamps, it is admitted, will not exceed 1 ton per head per day of 24 hours, accompanied with great wear and tear, and lets for repairs and adjustments, occupying an average of one day per week. Our experience of the new stamps is very decided as to its superiority, and its adoption will tend materially to ease the preparation of the dressing department, which always forms so trying a period in the history of every tin mine. STEPHEN HARRIS.

Great Wheal Vor, Nov. 29. ——

CHINA-CLAY AND STONE.

SIR,—Very serious disturbances took place last week in St. Austell, in consequence of the strike of the clay and china-stone workers there. The disturbance extended for miles. Tools were taken away, and threats of damage to property and persons were freely used. However much I deprecate these strikes and disturbances, I am in no wise at a loss to know the cause. The masters curtail the men's wages for the purpose of enabling them to carry on competition with each other in the sale of the clay and china-stone. It is true at the present moment trade is bad, but that is not the cause altogether of the low price of clay and china-stone. If the masters were to combine and fix the price honourably for these two articles—clay and stone—it is well known that the profits would be immense, and the labourer would then be entitled to his just due. Cornwall supplies the world with clay and with stone, but the masters are never satisfied unless they are competing with each other. The public and the manufacturer, of course, get the benefit, and it is truly said they do not thank the masters for the sacrifice they make; spread over the world it makes but little difference to anybody. In clay the profits may be obtained of 100,000*l.* yearly, and in china-stone 50,000*l.*, but what is the fact—profits are completely out of the question, and the masters screw up the labourer to the fullest extent. Why not make a general pool of clay and stone, and let one man sell the whole and divide the profits every year? This was the case once in china-stone,

but it is broken up, and now they are competing with each other, so that a loss instead of a gain is being hourly sustained. A combination among the masters ought to take place to support prices as in the other trades, and as the number of clay merchants does not exceed 50, and the stone merchants 15, and it only requires a fair and honourable understanding to ensure to each and every one a fair profit, and at the same time the labourer would get his just due.

Liskeard, Nov. 26. A CORNISH SHAREHOLDER.

PROSPECTS OF CORNISH MINING.

SIR,—No time in the annals of mining has presented such a favourable opportunity for the investor than the present; that the time has arrived to make a selection for investment is evident from the fact of a reaction having set in in the price of metals. The copper and tin markets, which have been for a long time in a depressed state, have began to show signs of animation, and a gradual rise in their value has taken place, causing an increase in the value of mining stock within the past two months of something like 20 per cent. This I venture to predict is only a beginning of better things. The important improvements in several of the leading mines known to the writer will shortly verify the assertion. The mines likely to take a start in the commencement of the New Year are those of good management—for instance, Wheal Unity Wood, where the present price of shares does not represent the value of the plant on the mine, an outlay in such a property must be attended with profitable results; indeed, there is no loss, for the purchaser has value received on the machinery, while he gets the benefit accruing from the development of the mineral ground laid open; this is only an isolated case, several others are known to the writer as holding out equal inducements, caused, no doubt, by the late unparalleled depression in all kinds of mining enterprise, stimulated by the increased demand and consequent rise in the value of metals. This kind of stock is eagerly sought after as presenting an opportunity of enriching those who may be fortunate enough to succeed in obtaining the stock ere the anticipated rise in its value takes place. In the eastern division of this county the mines likely to take the desired turn, founded on their own merits, are Marke Valley and Gunnislake (Clitters), both of which are selling at a market price which will bear a considerable rise to equal their intrinsic value. Of new or unwrought mining ground, the prospective value of East Tresavean and Silver Hill will compare favourably with most of the mines in the county for making a quick return for a small outlay.

St. Day, Cornwall, Nov. 28. ——— CHAS. BAWDEN.

EAST WHEAL ROSE DISTRICT.

SIR,—Although many years have elapsed since working ceased in East Wheal Rose, the memory of its good character will not soon die out. It is true that the last company who carried on the works lost very considerably, but it has been alleged that their management was not judicious. How far that statement is correct I cannot say, but it is certain that under the former management the mine yielded above 200,000*l.* profit, of which Messrs. Robt. Michell and Son had a large quota. It was, however, the first of Mr. Michell's adventures that was a success, for he had been constantly speculating in mines 40 years previously without the return of a penny. East Wheal Rose trebly paid him for all his losses. It has been frequently said that mining will pay on a long run. Mr. Michell is an instance of what perseverance will do. He had faith in mining, and his faith and hope were realised. He was throughout a long life well known as an honorable Christain gentleman, and he died in a good old age—94 years old: 12 years ago, since his decease, his son, Mr. Edward Michell ("a chip of the old block") has carried on the business in Truro, so many years conducted under the firm of Robt. Michell and Son, as smelters, timber, and coal merchants, &c., but very recently Mr. Edward Michell retired from the company, leaving the business in the hands of his nephew, Mr. Richard Ferris Michell, whose place of business (which is very extensive) is Malpas-road, Truro. The smelting department was relinquished about two years ago. Mr. R. F. Michell treads in the steps of his late partners.

I do not remember with certainty the number of shares into which East Wheal Rose was divided, but I think it was 128, and the price per share was as high as 1300*l.* I knew one gentleman who paid 700*l.* for a half share. This was about the year 1845. I think it was in the following year, 1846, that a very lamentable catastrophe occurred at the mine. A water-spout burst over the land, and the river being too narrow to carry off the flood, the water ran into the shafts, or one of them, and drowned 40 of the miners. Many others had narrow escapes, one of whom is Capt. George Tremayne, the manager of Unity Wood Mine, who showed singular resolution on the occasion.

About this time (1846), owing to the failure of the potatoe crop and a deficiency of harvest, the price of wheat advanced to 45*s.* per Cornish bushel of 24 gallons, and it was apprehended that a famine was imminent. Under these circumstances the adventurers in East Wheal Rose, to ensure a supply to the miners during the scarcity, purchased a cargo or two of flour, and sold it to them at cost price. A kind Providence, however, saved us from a famine, the supply having been equal to the demand until the following harvest. Potatoes at that time were so dear that many families used rice instead of that root, the price of which has never returned to its ancient cheapness. At the present time it is four times as dear as it was previous to the advent of the disease in 1845—the disease itself not being quite extinct, and the value of land having almost doubled in price. We shall never again see potatoes so cheap as they were 35 years ago.

I have been running away from my subject. I meant to say a few words about the district of East Wheal Rose. I never heard that any mining operations had been undertaken within the district prior to the late Sir Christopher Hawkins's work at Shepherd's Mine—about ⅜ of a mile westward of East Wheal Rose—a mine which he worked many years, and, it is understood, with great success. The silver was extracted from the lead ore on the spot and sold in slabs. The works were under the direction of Mr. Giddy, who resided in Shepherd's House, close by the works. The amount of profits I never knew, but I am told that it was very considerable. The land was the property of the late Sir C. Hawkins, and it is now that of his nephew, C. H. T. Hawkins, Esq. The mine has been idle many years. South Shepherd's, contiguous, was afterwards worked by Messrs. Davey and Co., I believe profitably, but it is also idle. Many applications have been made for grants for mining the Shepherd's, but owing to a dispute as to the mineral rights in Cargoll Common, close by at the east, the works have not been resumed. The dispute was between Mr. Hawkins and the Bishop of Exeter. It has lately been decided in favour of the latter, or rather Ecclesiastical Commissioners, so that now setts may, I suppose, be taken by miners without risk of legal trouble. The lodes in the Shepherd's Mine have an easterly strike; but the lodes in East Wheal Rose are north and south lodes, except one, which runs towards the Shepherd's Mine.

Cargoll Mine, now at work, lies southward of East Wheal Rose, and was a part of that sett. This is a silver-lead ore producing mine, which has been at work about 15 or 20 years, and has been variable in its circumstances. Capital raised, 6*l.* 6*s.* per 3348th share; returned in dividends, 4*l.* 16*s.* 3*d.* per share. Last dividend, paid in October, 1872, 12*s.* 6*d.* per share. Purser, Mr. E. Michell, Truro; manager, Capt. John Jennings. Prospects, I believe, good.

I published a map of this district in 1847. At that date there were nearly 30 mines in it at work. At this moment I know of no mine at work within it except Cargoll, and in the eastern part of East Wheal Rose. I do not remember just now the names of all the 30 (more or less) mines, but I will name those that are present in my memory—Wheal Michell, a sett taken up by the late Captain Champion, who did little in it, near Killigrew Barrow. Rickard's Wheal Rose, Martha Mine, North Wheal Rose, Rose Consols, Penhallow Moor, Trerew, Rosecliff and Tolcarne, Wheal Acland, Trevilson, Wheal Arthur, and Wheal Elizabeth. Another mine, near Zelah, where the managing agent cheated the adventurers of several thousand pounds, then went abroad to prevent prosecution, and died.

Most of the mines were only slightly worked. I do not think that the district has been fairly tested. Shepherd's should be worked again, and perhaps East Wheal Rose.

This district may be regarded as embracing the parishes of Newlyn and St. Columb Minor, also parts of St. Erme and St. Allen. It is not so decidedly a mining district as Camborne, Illogan, Redruth, Perranzabuloe, St. Agnes, Gwennap, Breage, &c., being chiefly an agricultural district, having little mine or other waste within it, except Newlyn Downs, which extends over some hundreds of acres. While East Wheal Rose was at work the villages of Newlyn and Mitchell were full of "life," now trade is flat, but intemperance is less. Mitchell was a parliamentary borough town till 1832; it contains about 150 inhabitants, but that exceeds the population of some disfranchised boroughs.—*Truro, Nov.* 28. R. SYMONS.

MINING IN THE LLANRWST DISTRICT.

SIR,—It is quite refreshing to notice the change which has come over the spirit of many people's dreams regarding this district, and especially the mine I have the honour to be connected with. For upwards of three years we have had to contend against a persistent and virulent prejudice, the audacity of which culminated against this mine. It unscrupulously ignored occularly demonstrated facts. It went so far as to deny that ore was ore—or, if it was, it would not realise the commercial value of this commodity. It will scarcely be credited that persons whose interests were being promoted by the operations of this mine should be found prominently associated with the propogators of a virus whose insiduous influence was reacting on themselves. It is not to be wondered at that little, stuck-up, strutting, impertinent nonentities, who have succeeded through fortune or misfortune to the prefix Captain to their otherwise obscure names, should envy the success they could not emulate, and that the force of impudence by which they become invested with this little distinction should still prompt them to its indulgence in even the most hopeless enterprise. I am actuated to these remarks by those of your own in last week's Journal respecting the Clementina Mine. I was glad to see it is in contemplation to work that part of the property situated to the east of our own separately. Capt. Roberts, so far as an outline of his report has been indicated by your remarks, seems to have taken a very correct view of the property and its prospects, and also that the two most essential elements of success in all mining should be respected in this—the introduction of "capital and brains." I was glad to see that opinion so emphatically expressed, as the brain part of the business is too frequently overlooked, or thought but little of, and also because it corroborates, although indirectly, an opinion I expressed about two years since in a series of letters addressed to yourself, and published in the *Mining Journal*—on mining in this part of Wales—I cannot be more fully impressed with the importance of the brain element in mining now than I was then, although every extended development systematically prosecuted in the district has been an additional confirmatory fact of that view. And none more so, because none more extended or systematically developed during that period than the Llanrwst Lead Mine. A liberal outlay has been made on the works to attain that end, and I am happy to say that the mine has responded with an equal liberality. It is commonly said, and truly in general, that "good wine needs no bush." But our experience in this mine flatly and absolutely contradicts that aphorism.

I shall hail with unmixed satisfaction the accession of a few intelligent mine agents to this district, men whose acquired knowledge from practical and scientific experience will enable them to form consistent opinions concerning mines, and to correctly interpret the sign manual of Nature's unerring hand respecting the hidden, but clearly—in this district—indicated treasures disposed in various forms throughout her vast treasure house.

As it is in every other pursuit so it is in mining—if a knowledge of the principles be not understood the practice cannot but be a haphazard experiment. In no place with which I am acquainted has mining suffered more from the unintelligent manner of its working than in this part of Wales, nor in any place within my knowledge in Great Britain do equal opportunities abound for successful mining. It is to be hoped that the defect of which I speak will be remedied, and that men of whom one need not be ashamed will be relegated to the task of developing the mines, which I have every assurance in saying are not of greater importance as it respects their success than that attaching to the individuals appointed to superintend them. If this part of the business be intelligently respected, and the necessary funds provided to work the mines on a scale commensurate with their producing capacity, a succession of successes of different magnitudes may be confidently expected.

Llanrwst Lead Mine, Nov. 29. ROBERT KNAPP.

SOUTH CONDURROW MINE, AND ITS MANAGEMENT.

SIR,—The numerous letters in the Journal on this mine reminds me very forcibly of the angry correspondence which was published just exactly two years ago in opposition to the then change of management. I held aloof from that discussion, but watched the course of events, and saw that it was a good move, and increased my holding in the mine when shares were at a very low ebb. Time, however, which "tries all," has proved that the much abused London committee deserves at least the best thanks of the shareholders (or, rather, something more substantial) for the determined action they took in changing the management in the face of the whole opposing force of Cornish merchants and other local shareholders. This London committee might now point with pride to the financial position of the mine, and to the profits divided, and ask where there is a solitary mine west of Truro where the finances are to be compared to South Condurrow. It is well known that most of the Cornish mines where the accounts are managed in Cornwall are in a deplorable condition financially. I cannot agree with your correspondent "Veritas," who, I think, has distorted the facts in saying the present manager has had only the pleasant task of reaping the fruits of other people's labour. I happen to know there has been "sowing" as well as "reaping." Let us first take the present financial condition of the mine and see how it has been brought about. Why, by charging up two extra months' cost, amounting to some 3000*l.*, besides charging up 600*l.* in back bills left as a legacy by the late manager. This sum alone is sufficient to buy two good pumping-engines; but this cost has been brought up and good dividends paid with tin down to nearly 40*l.* per ton instead of being at 90*l.* per ton, as it was during the time the new engine was erected, and when heavy calls were made. Supposing a new cylinder was put in at the stamping-engine by the late managers, was not this very engine purchased by themselves a short time before? And if they bought an engine with a worn-out cylinder, which had to be replaced by new, it was no profit to anyone except the merchants, certainly not to the present manager, who I know has had to put in one if not two new stamps-axles to replace the old ones, which were bought at the same time as the engine, and which were just as defective as the cylinder. This, at least, could not be very pleasant "reaping." The stamps itself had been remodelled, and several new round buddles have been made, probably the number has been doubled. The spalling-floors have also been considerably enlarged, and a new weighbridge fixed. All these things cost money, but calls on the shareholders have not been made, although tin is so low.

The tin in stock about two years ago had been credited by the late managers at about 70*l.* per ton, but since the change at, I believe, less than 60*l.* per ton; so this could not be a very profitable transaction. It is well known that there is now more than double the quantity of water to contend with than formerly, owing to the abandonment of East Wheal Grenville. This has greatly increased the cost of engine expenses—besides, new pitwork has been put down to cope with it. If the mine at the time of the change could then be worked so very economically, as has been stated, how could the late managers estimate the future working expenses at several hundreds of pounds monthly, more than has actually been spent under the present management, although fully double the amount of tutwork is now being carried on?

I cannot say whether the underground operations are reported high enough or not, but I fail to see, as hinted at, what sinister designs the agents have in not reporting the full value. I have, however, noticed that generally in mines the higher the reports the worse the results. In this very mine it was not unusual for the late managers to report the lode to be worth 150*l.* per fm.; but, although it sounded well, we had no profits. I cannot imagine how the present manager can be said to be following up the discoveries made by his predecessors when they abandoned the bottom of the mine and stopped the 93 cross-cut towards the tin lode, giving, as a reason, that the ground was too hard to penetrate. The great lode has, however, since been intersected in the 93, and large quantities of tin are now being raised therefrom. The recent discoveries in the 60 and other levels have been made after driving cross-cuts to reach the lode, which was never attempted by the late managers. There is no doubt that the new ground to the west adds greatly to the value of South Condurrow, as it embraces the whole of the Wheal Grenville lodes, and allows the development of the South Condurrow great lode to any depth in entirely new ground; but the late managers never made the faintest effort to secure this addition to the sett. Through the exertions of the present manager, Mr. W. C. Pendarves, the owners of the property very liberally granted a new lease for 21 years, at 1-24th dues. It has often been said that a good mine makes a good manager, but the reverse is also true, that a good manager makes a good mine. I can, however, truly subscribe myself—

Camborne, Nov. 29. A SATISFIED SHAREHOLDER.

GLENROY LEAD MINE.

SIR,—"Crede" in last week's Journal, writing of the above mine in a faithful and favourable report, quoted the opinion of Capt. R. Rowe, the mining manager, "that if the lode as cut in the upper levels should also be met with in the cross-course, then being driven at the 60, the mine would at once become a success, and be all he ever stated it would be." "Crede" will ere this be aware that at the time his letter was being "set up" a telegram was on its way from Capt. Rowe stating that a large and improving lode had been cut in the 60. There are now, therefore, well founded grounds for believing the Glenroy Company may prove a prize, perhaps not second to its near neighbour, the Great Laxey. MANX.

CWM DWYFOR MINE, CARNARVONSHIRE.

SIR,—You kindly inserted in the Journal of Nov. 4 a letter from me on the subject of the above mine, and its prospects of early success. I am glad to learn that the directors of the late company have now devised a scheme for re-starting the undertaking by a new limited company, with a nominal capital of 20,000*l.*, in 20,000 shares of 1*l.* each, offering to the shareholders until the 31st proximo, the option of taking one share in the new company with 10*s.* credited thereon as paid up for each share they hold in the old company, thereby giving them the opportunity of retaining an interest in the mine on favourable terms. No premium is charged to the new company on the transfer of the property, the only object the directors evidently have being legitimate mining on the principle so successfully adopted by Mr. J. Y. Watson, and it is to be hoped that those shareholders who have hitherto been apathetic and indifferent will, to use the words of the circular issued by the late directors, now "see the wisdom" of coming forward and of taking up the full number of shares in the new company to which they are entitled under the plan proposed. A further report on the mine by a good practical authority (Capt. John Roberts, of the Symdde Dylluan Mine) appears to have been lately obtained, and this confirms the previous opinions expressed by others who have visited the Cwm Dwyfor Mine, that in depth the lodes would be found to be very productive. I think the directors deserve great praise for the exertions they have made without remuneration on behalf of the shareholders of the old company.

A SHAREHOLDER, WHO INTENDS TAKING UP HIS FULL NUMBER OF SHARES IN THE NEW COMPANY.

Dec. 1.

ROOKHOPE LEAD MINING COMPANY.

SIR,—The Journal of last week contained a letter from "H. C. C.," who seemed to doubt the assertions made in May last by the secretary of the company. I am in ignorance as to whether the secretary will reply or not, so as I am a shareholder in the company, and take considerable interest in its development, and know what has been done, I venture to endeavour to satisfy "H. C. C." For instance, the secretary is quoted as having stated in May last, "that in about six months the 42 fathom level would be driven far enough to drain the winze, from which in 1870 six men raised 40 tons of ore per month." It is not seven months now since that statement was made, and although driving the 42 had to be discontinued for a considerable time, yet there is only a short distance left to drive, and already the level is improving for lead. If all mining prognostications were so near fulfilment as this one there would be little cause for discontent. I have been a shareholder for a longer period than since last May, and could have sold my shares at a good profit, but from what I knew of the mine I preferred waiting for a still better price; and perhaps if "H. C. C." paid a visit to the mine he might think, with the secretary, that the shares are worth 3*l.* to 4*l.* each. That the shares are not so high as they were six months since is due to other causes than the intrinsic value of the mine, and is satisfactory to those who are adding to their holding, and who do not expect the rich points of the mine to be reached in less than a reasonable time. With regard to the remark of "H. C. C.," that lately little information has been published about the work done at the mine, I may say this contrasts favourably with those glowing and gushing accounts published of some schemes only to beguile the unwary. "Good wine needs no bush." Still, though quite satisfied myself, I trust a more official reply will be vouchsafed "H. C. C." Full reports of the mine are published in the *Mining Journal*, the last one stating that the 42 will be driven under the rich winze by next month, when they commence rising. G. E.

ROOKHOPE LEAD MINING COMPANY.

SIR,—I doubt if I am quite right in noticing the letter of your anonymous correspondent in last week's Journal, as such enquiries, if *bona fide* and made by a shareholder, can easily be addressed direct to the office. But as the telegram referred to appeared in the *Mining Journal*, I have to say that I addressed it to a large shareholder, and I had no idea it would be published. It contained facts which I saw at the mine, and information which I there obtained from our own agents, and also from the large shareholder whom I then met, and whose agent had inspected the mine a few days previously. I must add that the latter valued the lode in some places at more than the former.

I have said thus much to justify the nature and tenour of the telegram, and will only remark that I know nothing to alter my view of the merits of the mine. Time has been required to put the machinery and other appliances for returning the ore in an efficient state, and to open the ground properly; but I repeat that those who will visit the property and examine the works for themselves, or by their competent agents, will form a much better opinion of its value than the present quotation of the shares would seem to indicate. THE SECRETARY.

[DISCLAIMER.]

LORD MAYOR'S COURT—ETHERINGTON v. WARD.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—With reference to the above action, I beg to inform you that I am the only Member of the Stock Exchange bearing the name of William Ward, and I was not the defendant in the case.—75, *Old Broad-street, E.C. Oct.* 28. WM. WARD.

[For remainder of Original Correspondence, see to-day's Journal.]

Vice-Chancellor Malins has appointed Mr. James Cooper (Johnstone, Cooper, Wintle, and Co.) official liquidator of Gaudet Frères, London and Paris Steamship Company (Limited).

HOLLOWAY'S PILLS AND OINTMENT.—These remedies correct that state of the system which arises when the functions have been overworked. A low kind of inflammatory state arises in the blood, which is a fertile source of rheumatism and gout. The nerves partake of the general derangement, and hence neuralgic pains so frequently occur. The acute suffering that ensues on the supervention of these pains must be felt to be understood. These pills strengthen and renovate the nervous system throughout, and consequently the whole bodily and mental functions are restored to vigour. They are of great value in those conditions of loss of tone brought to by excess or free living, and in constitutions weakened by premature development or exertion.

Meetings of Public Companies.

DEVON GREAT CONSOLS COMPANY.

The ordinary half-yearly general meeting of shareholders was held at the company's offices, Gresham House, Old Broad-street, on Tuesday, Mr. W. A. THOMAS in the chair.

Mr. ALLEN (the secretary) read the notice convening the meeting, and the minutes of the preceding one were confirmed, and ordered to be passed under the common seal.

Mr. MORRIS read and explained the reports and accounts, as some shareholders had only received the former on entering the room, owing to delay in printing. The directors presented the statement of receipts and expenditure to October 31. The various items are of the usual character, and require no particular comment. A considerable portion of the timber imported, as anticipated at the last meeting, has been paid for. The extraordinary item of 635*l.* 18*s.* 3*d.*, for the Copper Miners Company's returned acceptance, has somewhat disarranged the cash balance, at the same time the directors are assured that ultimately no loss will accrue to the company. It is the first time in the long experience of the directors that such a defalcation has occurred. He might mention with reference to this statement that he was informed upon the best possible authority that the Copper Miners Company's assets were ample to pay twenty shillings in the pound to all the creditors, and also leave a surplus of 20,000*l.*, and that the winding up would be speedily carried out. The report then went on to explain that, although the balance of cash and bills receivable appears to be considerable at the date when the accounts were made up, there was a payment of 3216*l.* for a monthly cost and dues on ores paid a few days after. Captain James Richards's report states that the productiveness of the mines continues, but the unprecedented low price which the ores have realised has sadly interfered with the financial success of the company. The directors, however, anticipate shortly an improvement in this respect. The directors have concluded a contract for the sale of the arsenic to be made during 1877, at a price which, under the present depressed state of trade, may be considered satisfactory. As to the statement of accounts, the members had all received them with the notice of the meeting, so that it would suffice to say that their credit balance brought forward was 5936*l.* 13*s.* 9*d.*, and at the time to which the accounts were made up had been increased to 6413*l.* 7*s.* He need not trouble them with Capt. James Richards's report in detail, as the gist of it was contained in the concluding paragraph, wherein he stated that, having referred in detail to the different points of operation throughout the mines, he has pleasure in calling especial attention to the new south lode in the new or Blackwell's shaft at Wheal Anna Maria, some 90 fms. to the west of Jeffry's cross-cut, and nearly a mile west of the important discoveries being made at Wheal Emma, in and about which shaft the lode presents a very encouraging appearance, and being in the neighbourhood of the great cross-course, in connection with which the extraordinary deposits of ore at Wheal Maria and Wheal Fanny were found, it is hoped that good results may attend the prosecution of this lode also, as the workings progress in this direction. The gossan they had seen here was better than any they had had since the discovery of the great lode at Wheal Maria. At Wheal Josiah, in the sinking of Richard's engine-shaft, notwithstanding the ground for some considerable time proved hard, very satisfactory progress on the whole had been made, and it is calculated that in about 12 months from the present date the required depth for the 300 fm. level will be reached. At Wheal Emma the new shaft, on the new south lode, is going down in a good course of ore below the 175, and as soon as it reaches the depth of 9 ft. below the level the skip-road will be brought down and plats will be cut, which will occupy about two months, when no time will be lost in resuming the sinking of the shaft and driving the 175 east—two points of great importance, this being the deepest part in the mine on this lode, with a course of ore holding down to the present bottom, worth 30*l.* per fathom. The 175, he might observe, was a very important point. At the 160 east the lode, as anticipated in the last half-yearly report, has considerably improved, being where cut into for its full width a very fine course of ore, worth 15 tons, or 60*l.* per fathom; and in the bottom of this level, in a winze 28 fathoms east, the portion of the lode carried (5 ft. wide) is also yielding for the length of the winze (9 ft.) 15 tons of ore, or 60*l.* per fathom. In the 145 east the lode during the past six months has proved continuously productive, and the present end is still worth 8 tons, or 32*l.* per fm. In Cocking's winze, sinking below this level east, the lode at the deepest point reached is improved, being worth 10 tons of ore, or 40*l.* per fathom. In the 130 east the lode has also proved a continuous course of ore, and the present end is worth 8 tons of ore, or 32*l.* per fathom. As suggested in the last half-yearly report, a cross-cut (Friend's) is being driven south of the main lode at the 137, some 45 fathoms ahead of the 115, the furthermost eastern point reached on this lode, for the purpose of intersecting and opening up the lode as rapidly as possible, and also for ventilation; and, judging from the very encouraging indications presented in the different levels and in the present bottom of the new shaft, further important discoveries may reasonably be anticipated both in length and depth on this great and promising lode. They would understand this more fully when he reminded them that they had had a continuous course of ore from the 115 to the 175. The report concluded by stating that the underground ore reserves now amount to a total of 33,014 tons, and 23,000 tons of arsenical mundic; and, in addition to these reserves, there is an accumulation of halvans at surface amounting to several thousands of tons, which as soon as the dressing machinery, now almost in a state of completion, is set to work will cause the samplings to reach 1000 tons per month, supplemented by the usual important monthly returns of arsenic.

A SHAREHOLDER enquired what quantity of halvans they had, and why they had been permitted to accumulate?——Mr. MORRIS said it was rather difficult to estimate the quantity of halvans, but he would think there was at least 20,000 tons. The reason they had accumulated was because they had no opportunity of dressing them.

A SHAREHOLDER understood that they had plenty of machinery for dressing purposes, and enquired whether the 33,000 tons of ore in reserve meant ore ready for sale at 4*l.* per ton?——Mr. MORRIS said that it was quite true that they had plenty of machinery for the general purposes of the mine, but special machinery was necessary for dealing with such low-produce stuff as the halvans. The machinery which they were putting up was principally dressing machinery, which would be worked by water-power, and they hoped by that means to be able to treat the halvans very cheaply. The reserves were, of course, estimated in the mine, and he might say roughly that the cost would be about 2*l.* per ton for raising, dressing, and contingent expenses, so that they might calculate that 33,000 tons was actually worth to them about 2*l.* per ton, or 66,000*l.* in all; upon this point, however, he might observe that all who knew Capt. James Richards knew that his estimate would be under the mark rather than over.

The CHAIRMAN might explain that in making estimates of this kind it was usual to calculate that ore seen in a level continued 5 fathoms above or 5 fathoms below, as the case might be, but they knew there were many instances in which this did not turn out absolutely correct.

Mr. MORRIS remarked that Capt. Richards had had so much experience, especially in their own mines, that he could judge with considerable accuracy.

Mr. PETER WATSON thought that the method explained was that usually adopted in Cornwall, and they all knew that Capt. Richards's estimates had usually been realised.

The CHAIRMAN said that Capt. Richards had often told him that his estimates had usually been exceeded.

Mr. P. WATSON reminded the shareholder who had asked the value per ton of the reserves that the 2*l.* per ton would not represent profit, as the ordinary expenses would be going on, and provision had also to be made for the necessary works of development. He would also like to know how much further they had to drive the cross cut at the 137 fm. level, and whether the accounts did not really show that they were 1300*l.* worse than 12 months ago?

The CHAIRMAN said that they paid for everything as they went on, and at present their stores were heavy.

Mr. MORRIS, in answer to Mr. Watson's remarks, said that they, of course, wanted capital to conduct the mine. As to the cross-cut, the ground was tolerably easy in the 137 fm. level, and he would think that they could drive 6 fathoms a month; it would take two or three months longer at least. It was better to read the weekly reports to know how they were going on at this point. Mr. Watson had said they were 1300*l.* worse, but they had extra timber in hand for the whole of the next year, and there was the 600*l.* for the Copper Miners' dishonoured bill. Their last sale was about 3700*l.* for copper and 1350*l.* for arsenic—say, 5000*l.* in all; and against this the costs and charges would be about 3700*l.* He thought he understood that Mr. Watson wanted to get at the real value of the property, and consequent value of the shares. (Laughter.)

Mr. P. WATSON said not at all; he was well acquainted with the value of the property, and only wanted to get more shares. (Laughter.)

Mr. MORRIS said that, as to the value of the shares, both himself and Captain Richards were convinced that the present quotation did not represent half their real value. Their expenditure had of late been heavy. They had been obliged to import Quebec timber, as otherwise they could not get it large enough. They were also, as the shareholders knew, doing much work which was temporarily unprofitable; by arrangement with the Duke of Bedford, and in consideration of which they had a reduction of dues from 1-12th to 1-15th, and he had no doubt that this reduction would continue during the whole lease.

Mr. P. WATSON considered that everything in connection with the mine was very satisfactory, and he believed it would return to good profits again. He then moved the reception and adoption of the report and accounts.——Mr. REDPATH seconded the resolution.

Mr. FIELD (managing partner of the Cornwall Arsenic Company) was not going to move an amendment to the motion, but had a grievance which he wished to bring before the meeting. He complained that the arsenic had been sold without competition, though he had been trying for the last six years to compete for it. He wrote to the board on Oct. 7 asking when the directors would be prepared to offer the next year's arsenic, and stating that he would compete for it if the competition were fair and open. He received a reply stating that it was too early to consider the question, but that he should have an opportunity of competing. He wrote again in November, and on Nov. 21 the secretary wrote him that the directors had disposed of it. He considered, therefore, that the Cornwall Arsenic Company, of which he was the managing partner, had been very badly treated in this matter.

The CHAIRMAN said they were induced to accept Messrs. Drayton's contract for the arsenic, because they believed that in doing so they were studying the best interests of the company. Messrs. Drayton undertook to pay what the directors considered a fair price, and they thought, moreover, that their former contractor was entitled to consideration, because last year's contract had entailed a loss upon him. He would further say that the directors suggested the price and Messrs. Drayton accepted it. In the previous year they invited tenders, and even Mr. Field did not tender, the one tender received being that of Messrs. Drayton. This was only accepted in a modified form, the directors always stipulating that they were not bound to accept the lowest or any tender. If Messrs. Drayton had not this year accepted their price they would have invited tenders; in fact, the form for doing so was printed, and at present before him.

Mr. FIELD said that as the Chairman had referred to previous years he would explain why he did not tender. He wanted an open tender, and to be present when the tenders were opened. But on a previous occasion, as he had learned from the former partner of Messrs. Drayton, they had put in a tender offering to give 6*l.* per ton more than the highest bid.

A SHAREHOLDER suggested that the arsenic might be offered by tender, the directors fixing an upset price, below which they would not sell.

The CHAIRMAN explained that themselves and the Cornwall Arsenic Company were the only large makers of arsenic, so that the company's position was quite different with respect to the sale of arsenic and to the sale of copper or other metals for which there was any real competition. In inviting tenders they always protected themselves by saying that they would not bind themselves to accept the highest or any tender.

A SHAREHOLDER enquired what was the present price of arsenic?——Mr. FIELD said 17*l.*

Mr. ALLEN did not doubt that a few tons might be sold at that price, but he would like to know how much Mr. Field could sell at 17*l.* per ton? Could he sell 2000 tons at that price?——Mr. FIELD said certainly not. He did not pretend that he could; but if he could get the Devon Great Consols make he would then have four-fifths of the entire produce of the country in his hands, and could control the market completely.

The CHAIRMAN admitted that fact, which was the very fact which influenced the directors. It was a question whether they should hand over the control of the market to Mr. Field or retain it themselves. They preferred, in the interest of the company, to retain it themselves, and he was sure the majority of shareholders would support them.

Mr. REDPATH said it was always with mistrust that they saw purely personal matters brought forward at a meeting, and more especially so when, as in this case, the change proposed was entirely in the interest of the individual shareholder bringing it forward. The question was whether it would be desirable to put the entire control of the arsenic market in the hands of their strongest competitor? If they did so they would put the company in a false position, and he was sure no shareholder would desire the directors to do that. There was one point, however, in which he agreed with Mr. Field—that after the first letter sent to him by the secretary he should have had an opportunity of tendering, whether his tender was accepted or not.

Mr. P. WATSON had no doubt that the directors had been influenced by a desire to make up some loss which Messrs. Drayton had incurred, and the shareholders must also remember that it was essential that the directors should keep up a competition. (Hear, hear.)

The motion for the reception and adoption of the report and accounts was then put to the meeting and unanimously carried.

Mr. P. WATSON then moved a vote of condolence to the widow of the late Mr. Blackwell, the director whose death was announced in the report, stating that Mr. Blackwell was an old friend of his, and had been a near neighbour for years.

The motion was unanimously agreed to.

The CHAIRMAN said they also had to record the death since the issue of the report of Mr. Chatfield, one of their auditors, and he might mention that a special meeting would have to be called to fill up the vacancies. He would take the opportunity of saying that he regretted having to place his own resignation in their hands, as he had for the past ten months suffered so severely from bronchitis that it was impossible for him to give the everyday attention to the business of the company he had been accustomed to give. He had occupied the position for 32 years, and must, therefore, ask the shareholders either to accept his resignation or excuse him from such constant attendance.

Mr. REDPATH said it was not because he could not give so large an amount of time as he had been accustomed to that Mr. Thomas's presence at the board was less valuable, so he was sure the shareholders would decline to accept his resignation.

Mr. P. WATSON hoped that Mr. Thomas would not think of retiring, and the whole meeting intimated the same feeling.

Mr. THOMAS thanked the shareholders for the kind expression of confidence in him they had given, and would continue to do as much as he was able for the interest of the company, in which he had so long been the largest shareholder.

A cordial vote of thanks to the Chairman terminated the proceedings.

PANULCILLO COPPER COMPANY.

The ordinary general meeting of shareholders was held at the company's office, Great St. Helen's, on Wednesday, Mr. JOHN PENDER, M.P., in the chair.

Mr. J. S. ALEXANDER (the secretary) read the notice convening the meeting.

The report of the directors was submitted:—

The directors submit to their fellow-shareholders the annual accounts of the company, made up in Chili to June 30, and in London to Sept. 30, 1876, and which show a net profit for the year of 21,772*l.* 18*s.* 11*d.*

In the past twelve months 6085 tons of regulus were made at Panulcillo, containing 2776 tons of copper, and the average price realised was $15·77 per quintal of regulus, as compared with $15 38 in the previous year.

The improved result of the operations as compared with that of the former year (when the net profit was 14,009*l.* 12*s.* 6*d.*) is due to the better prices realised for the company's regulus, and to the lower cost of fuel and of ores bought for mixture. On the other hand, the dead work in the mine has been more expensive, and there has been a loss by adverse exchange on remittances.

By the mining report for the last six months it will be observed that while the output has fallen off there has been an improvement in the ley of ores extracted from the Panulcillo Mines. The diminished production is attributed to frequent delays occurring in the Mina Vieja, in consequence of changes in formation of the lode necessitating great caution in opening out and timbering the stopes.

The reserves in sight were estimated on June 30, 1876, at 800,000 quintals metrico, as against 750,000 quintals metrico on Dec. 31 last.

The numbers of 129 first mortgage debenture bonds, representing 12,900*l.*, drawn on Oct. 16 for payment on Dec. 15, 1876, were advertised in the Times and Daily News of Oct. 17, in accordance with stipulations contained in the Indenture of Agreement.

The directors have to announce with very deep regret the death, on the 9th inst., of their late esteemed colleague and deputy-Chairman, Mr. Edward Johnston. The board desire to record here their great sense of the unfailing support willingly accorded by him to the company since its formation.

The two directors who retire by rotation at the meeting are Mr. Frank Walters Bond and Mr. Francis John Johnston, and who being eligible offer themselves for re-election. The auditors, Messrs. Harding, Whinney, and Co., offer themselves for re-election.

The CHAIRMAN had congratulated the shareholders at the previous meeting upon the improved state of things, and was glad to be able to confirm the report then given. The utmost vigilance had been exercised at Panulcillo to keep down costs, and the report showed the improvement that had resulted. They had 14,000*l.* profit last year, and 21,000*l.* profit this year, and both after paying the debenture interest. The mine is in an improved position, and copper at a price that will give us good results next. He would ask the secretary to read the latest advices they had received from the mine.

The SECRETARY said the report was dated Alto, October 14, and stated:—

Oct. 14.—I beg to report the condition of the mines to date:—Asuncion: In this mine there is no change of any note to report.—Mina Vieja: All drivages in this mine, without exception, at the present time show a slight improvement. The new south stope has very considerably improved, the horse of poor stone in the centre of the stope cutting out, and the lode is proving wider and of better quality metal.—There is nothing further to note in this mine.—Soc. Nuevo: This week we finished taking down the backs in the whim plat for new poppet heads, and on cleaning up dirt by next Monday morning we start at once on building the foundation for the engine, fixing boiler, &c. The new bye adit level is within 20 ft. of holing; the completion of this, together with that of timbering the shaft, &c., will give us command of large quantities of metal, and add considerably to our present production from this mine. The cross-cut west, in the 120 metre level, from communicating middle shaft to perpendicular shaft, is proving some rich courses of ore gone down from the 100 metre level. We are now pushing on with the chiflon and winze, from the 100 metre level, to communicate to the 120 for ventilation, and on completion shall start a new sink on the underlie of the lode, and prove in depth to the 150 metre level. I have nothing further to note in this mine.—C. Negro; Stocks of ore are all cleared from cancha, and freights falling.—Production: To date this amounts to 2,000 metrical quintals, at 5½ per cent. My anticipations for a production for October of 40,000 metrical quintals may be relied on. I finish experiments with dynamite to-day, but shall have another week on powder, so that I shall be able to give you in my next safe comparative trials.—F. G. WELCH.

The CHAIRMAN continued that that showed a continued improvement in the mine, and there were good prospects of cheap coal and coke; indeed, they had their year's supply, so that they would be able to show profits. He thought they had got rid of all the inferior coke, which had caused them much annoyance, and they had now found a class of coke which suited them well. The management at the mine seemed to bear out what they stated at the previous meeting; no unnecessary expenditure was going on, and with copper at the present price, and the same economy at the mine, they would be able to show satisfactory results. They had at present more money at the bank, and fewer bills. He concluded by moving that the report and accounts be received and adopted.

Mr. ANDREWS seconded the motion.

Mr. W. THOMPSON enquired at what date dividends might be expected on the ordinary capital?

The CHAIRMAN said that if there had been no debenture debt they could have declared 15 per cent. upon their 200,000*l.* capital, and the idea now was, and he thought it was a good one, to reduce the nominal value of the shares and commence paying dividends at once—a scheme which he hoped would put the shares at a better price in the market. If they began paying dividends at once he believed this would be the result, and in a year they might talk of a dividend.

The report was then unanimously agreed to; Messrs. Frank W. Bond and Francis J. Johnston were re-elected directors, and Messrs. Harding, Whinney, and Co. were re-appointed auditors.

The CHAIRMAN said that before putting the next resolution he must express the deep regret of himself and colleagues at the loss of one of the directors (Mr. E. Johnston), who had been associated with the company from the outset. It had gone through a great deal of trouble to the present time, and he might say that had it not been for Mr. E. Johnston coming forward and giving his personal responsibility the company would long since have collapsed, and there would not have been a shilling for the shareholders. The directors much regretted that he did not live to see the prosperity which was now commencing. Turning to the resolution, he would remark that they might have a good mine and copper at a good price; yet, unless they had good management the results would not be worth much. The board had the fullest confidence in the management at Panulcillo, and he therefore had much pleasure in moving that the thanks of the shareholders be given to Mr. Heatley and the staff under him, which, no doubt, some one on the other side of the table would second.——Mr. BROWN seconded the motion, and it was unanimously agreed to.

The CHAIRMAN said the only question remaining for their consideration was the reduction of the nominal capital of the company. He would like the opinion of the shareholders as to the question of reducing the capital, so as to wipe out the debt which had to be paid before they could declare dividends. He thought there would be no difficulty in effecting an arrangement with the debenture-holders, as the debentures were held so largely by parties they knew.

The SOLICITOR explained that the position seemed to be that they had a balance of loss of 43,000*l.* which would have to be made before they commenced paying dividends. By the Act of Parliament power was given to reduce a company's capital, and in this case it was proposed that instead of the capital being 50,000 shares of 4*l.* each it should consist of 50,000 shares of 3*l.* each; that would give them 50,000*l.* balance to meet the 43,000*l.* on the other side. He did not anticipate any legal difficulty in Chili upon the question. He thought the creditors in Chili were few, and if necessary their debt could be paid off.

The CHAIRMAN said that their debts were very small, and he thought the debenture-holders should place no obstacle in the way, as debentures in a dividend paying company were worth more than in a non-dividend company.

A SHAREHOLDER held debentures, but could not see how the debentures could be improved by the proposed change.

Mr. F. J. JOHNSTON said there could be no doubt that by sanctioning the change and paying out dividends the security of the debenture-holders would be lessened.

The CHAIRMAN said that nominally it would be, and he anticipated that the opposition would come from the directors' side of the table. They were bound to pay off a certain sum annually, and the maximum payment would pay them all off in three years. He was rather anxious to get the debenture-holders wiped out.

The SOLICITOR, in reply to a shareholder, stated that the expense of carrying out the scheme would, probably, not be more than 300*l.* or 400*l.*, but, of course, the exact sum could not be stated.

The CHAIRMAN said that he himself represented nearly one-third of the debentures.

Mr. JOHNSTON enquired whether they had not better try another year?——The CHAIRMAN said that if they saw that the scheme could be carried out he thought it would be a desirable one.

The proceedings then terminated, with the usual complimentary vote of thanks to the Chairman,

GENERAL MINING ASSOCIATION.

The half-yearly general meeting of proprietors was held at the offices of the company, New Broad-street, on Tuesday, Mr. ARTHUR JONES in the chair.

The CHAIRMAN read a letter from Col. Scovell, the Chairman of the company, expressing his regret at his inability to attend the meeting, in consequence of his having to sit as a juror in a case at Westminster.

Mr. C. G. SWANN (the secretary) read the notice convening the meeting, and the minutes of the preceding meeting, which were confirmed.

The CHAIRMAN said he had very little to say with respect to the affairs of the company. The board were rather afraid that their new quarters would not be large enough to accommodate the shareholders, but as there was such a small attendance there was plenty of room. By this change of offices the company saves 160*l.* per annum, which in these depressed times was a consideration. The present was only a formal meeting, and there was no report or accounts to present, and the little information he had to give the shareholders was not of a cheerful character. The general depression in trade was, he supposed, known to all of them, and this company had suffered with other colliery proprietors in all parts of the world. He might give some idea of the state of the coal trade in Nova Scotia, where the company's interests are centered, by reading a few lines from a Halifax paper received this morning. After speaking of the general depression in the coal trade of Nova Scotia, the article concludes by stating that the total sales in the colony during the nine months ending Sept. 30 of the present year were 451,000 tons, as compared with 533,000 tons in the corresponding period of last year, which was anything but a brisk period—showing an adverse difference of about 80,000 tons in the nine months of this year. But the company had not only had to struggle against the depressed state of trade, they had had to contend with even a greater and more serious difficulty—a strike of nine weeks duration which had lately taken place amongst the men employed by the company. The claims of the men could not be entertained, for if they had the company would have been worse off than by resisting them, for during the strike a certain amount of expenditure was in abeyance, and the loss only represented the loss of sales during the best part of the year.

Mr. RUDING asked what was the period of the strike?——The CHAIRMAN replied that it was from May 30 to Aug. 30. The men struck for an advance of wages, but in the face of the fact that the company had been obliged to sell at a loss during part of the season, and that the operations of last year yielded no profit, it was simply an impossibility to entertain the demand of the men; and, therefore, the management on the other side, acting under the instructions sent by the directors, took a very firm stand, and in the end the colliers, finding that no concession was to be made, and after a period of great distress, insubordination, and attempts at intimidation, gave way, and work was resumed on Aug. 3. At the time that the men struck they were receiving a trifle more than the miners at the neighbouring collieries, and they had, therefore, no ground whatever for their demand; and, moreover, this company had given their men three or four days' work a week during the winter when other collieries in the neighbourhood had suspended operations.

Mr. RUDING asked whether the strike was general, and whether any reason could be assigned for it?——The CHAIRMAN, in reply, said the strike was confined to their collieries, and that there was no reason for it except a desire to obtain higher wages. Several collieries in Cape Breton had been closed throughout the whole of the winter season, and the greatest possible distress had prevailed in many districts—indeed, so great was the distress that the Government was obliged to extend aid to the people to keep them from starvation.

A SHAREHOLDER remarked that perhaps it was a pity this company's collieries were not also closed during winter.

The CHAIRMAN, in reply, said that so soon as the ice clears away the vessels come in, and unless there is a stock of coal on the bank the orders could not be executed very readily; however, he thought this year the board would be disposed to limit the amount of work, and it is a question whether the operations of raising coal from the pits should not be suspended until the advance of spring, and he hoped that next year's operations would show some economy through that course being taken. The secretary had put down the leading facts connected with the strike, but he thought they would not be of sufficient interest to the shareholders to delay them with their perusal.

A SHAREHOLDER suggested that the statement should be read.

The CHAIRMAN then read the statement, which was a detailed history of the strike. It stated that after the men had struck others were obtained, but they were driven away by the late employees of the company. The local authorities were applied to without avail; indeed, sympathy had been expressed with the men from the Bench, and the course of justice had been very much thwarted. The case became so serious, and the acts of violence so frequent, that Mr. Rutherford, the manager, was obliged to go to Halifax to complain against the magistrates. After this some of the men were tried, but eventually they escaped without punishment. In one case a can of gunpowder with a lighted fuse attached was thrown into the room occupied by one of the gang of men brought from Halifax, who fortunately cut the can off before it had time to explode. With much difficulty one vessel (the Delta) was loaded and dispatched, but after this loaded trucks of coals were upset and rails torn up, and at length the militia were called upon. However, the distress became so great that the men at length gave way, and returned to work, with the exception of about 30 of the ringleaders, who had been discharged. Since then the work had not been obstructed in any way. He (the Chairman) then stated that the conduct of the local manager under such difficult circumstances was worthy of all praise.

Mr. RUDING asked if there was any reason to believe that the manager had made himself personally obnoxious?——The CHAIRMAN replied in the negative, and in reply to a further question said the number of hands on strike was about 600. Of course, many of them were unwilling to strike, but were obliged to do so by their fellows.

A SHAREHOLDER asked if the wages were now sufficiently low?——The CHAIRMAN replied that they were the same as those paid before the strike, or about 12½ per cent. less than those of 1875, and lower than the rate of the previous ten years. The effect of the strike was that the shipments at Sydney showed a decrease of 25,600 tons as compared with the previous years, and the price per ton was 25 cents. less also, the present price being $2 per ton. He regretted to say that although there had been no strike at Lingan the raisings were relatively smaller than those at the other collieries. However, efforts were now being made to introduce Lingan coal as a house as well as a gas coal, and the services of a gentleman had been secured to restore the sale in the United States as well as in

Canada, the payment for which service would be by commission of the sales of the company's unworked properties as well as of its coals, and not by any salary. With respect to the "new winning" information had that morning been received from the manager that the water difficulty had at length been surmounted, and that henceforth there would be a very considerable economy in the working of this portion of the company's property. The Chairman, after expressing his regret at the unsatisfactory statement he had been obliged to make, concluded by courting comment or enquiry.

In reply to questions, the CHAIRMAN stated that negociations were pending which he hoped would end in the sale of the Springhill property; and, with regard to the sale of the Albion property, the company had to receive a further instalment of 25,000*l.* out of the total purchase price of 150,000*l.*

On the motion of Mr. BRIDGE, seconded by Mr. RUDING, a vote of thanks was then passed to the Chairman, and the proceedings terminated.

NEW CHIVERTON MINING COMPANY.

The ordinary general meeting of shareholders was held at the company's offices, Austinfriars, on Thursday,

Mr. W. JARDINE in the chair.

Mr. J. H. MURCHINSON (London manager) read the notice convening the meeting, and the subjoined report of the agent was submitted:—

Nov. 27.—I beg to hand you the following detailed report of the underground operations and work done since the commencement of the present company, and the present position and future prospects of this mine:—With regard to the work that has been accomplished, I have to inform you that the engine-shaft has been sunk 25 fms.—from the 35 to the 60—a plunger lift fixed at the 35, and two drawing lifts below that level. There has been sunk also 38 fms. of winzes. In reference to the levels, the adit has been driven north 22 fms, the 25 north 5 fms, the 25 south 13 fms., the 35 north 28 fms., the 35 south 44 fms., the 50 north 24 fms., and the 50 south 23 fms., making in the aggregate 159 fms. of level: total, in sinking and driving, 222 fms. on tutwork. The backs of these levels have been taken away on tribute, which have not been measured, but if required the measurements can be ascertained by a reference to the longitudinal section of the mine. As regards the present position of the mine I beg to state that the engine-shaft is sunk to the 60, where we have just started two ends on the course of the lode; the south end is worth 5*l.* per fathom, and the north end, though poor in starting, will undoubtedly very soon improve, as it will quickly enter the lead ground north of the shaft. The 50 north is worth 5*l.* per fathom, and the 50 south is worth 6*l.* per fm. In the 35 north there is a fine looking lode, although for the present it is only producing occasional stones of lead, but we expect a good improvement here very shortly. The 35 south is yielding good saying work, and looking promising for an improvement. In the back of the 50 north and 50 south there are seven tribute pitches, which are worth on an average 6*l.* per fathom, and working on a tribute of 10*l.* per ton for No. 1 quality of lead ores, and 5*l.* for No. 2 ditto. There are also six other tribute pitches at the 35, 25, and 15, worth on an average about 4*l.* per fathom. Considering the length of lead ground that is now laid open and the number of tribute pitches working thereon, we hope forthwith to increase the returns. We shall sample on Monday next, the 4th proximo, about 20 tons of lead ores. With reference to the future prospects of the mine I have pleasure in stating that looking at the productive appearance of the lode and the stratum through which it is running, there is every reason to expect that the lode will greatly improve as it goes down. There are also good reasons for expecting a good improvement at the 60, as the both ends will be speedily driven into and under productive lead ground. There is also a good prospect of meeting with a great improvement in the 35 north. That end has just passed through a large cross-course 12 ft. wide, known by the name of Wheal Byan, and it is an established fact that the ground east of Wheal Byan cross-course is more congenial for the production of lead than the ground west of it, and as this end will very shortly be clear of the cross course and into a good channel of ground, we may reasonably expect the lode to improve accordingly. In conclusion, I may remark with propriety, that when the 60 fm. level is opened up the returns will be materially increased.—JAMES TREWARTHA.

The CHAIRMAN said that, looking over the report, it appeared to be very clear, and all the points seemed to be promising, but there was one important point not mentioned in the report; he would have liked it to be stated what work had to be done to bring the mine into a self-supporting position, and how much money would be required for doing that work. He thought they had already done much heavy work, and they ought not now to have much to do to make it pay cost. He was aware that Capt. Trewartha could not state accurately, but he could give them some estimate.

Mr. MURCHISON said that a great deal had been done in the 16 months the company had been in existence. The late Mr. Martin had expended 35,000*l.* upon the property, and the Chairman had expended 5000*l.*, but everything now appeared to be near completion.

Capt. TREWARTHA said that to make the mine self-supporting they must continue driving at the 35 fm. level, and must drive the 60 fm. level north and south. If the 60 fm. level opens out as well as they hoped it would they would be paying cost in about six months.

The CHAIRMAN said that the question was what is best to be done to make the mine self supporting? Capt. Trewartha had estimated that the amount already expended would suffice, yet there was no question that at present they would have to make arrangements for raising some additional capital, and he would like to know what sum would really suffice.

The report and accounts were received and adopted.

Mr. MURCHISON enquired what would be realised for the parcel of ore about to be sold?——Capt. TREWARTHA said the ore would be sold next week, and would fetch about 200*l.*——Mr. MURCHISON remarked that this would make their balance about 350*l.*

The CHAIRMAN said that a little more capital would have to be raised, and he thought the meeting for doing so should be called within the next two or three weeks, as there are but 12 or 14 shareholders in the company there would be no inconvenience in calling it. He would mention, too, that Mr. Critchley Martin lived much in the country, and wished to resign his position as director; he understood that Mr. Bush was willing to take the seat, and would be glad to have him for a colleague.

Mr. BUSH expressed his willingness to become a director, and said that as to the working of the mine he thought they should confine themselves to the work actually profitable.

The CHAIRMAN said there were 3000 shares of 6*l.* each, and he thought that if they could get the liability on these extended to 8*l.* they would have the requisite capital, but this appeared to be impracticable.

Mr. MURCHISON said the liability could not be increased, but they could issue new shares, and even create such a number as to give those providing the 6000*l.* a bonus in paid-up shares for subscribing.

The CHAIRMAN thought that the matter could better be considered between this and the meeting, and consequently no arrangement was come to.

The proceedings then terminated.

WHEAL GRENVILLE MINING COMPANY.

The three monthly meeting of shareholders was held on Thursday, at the offices of the company, St. Andrew's House, Cornhill,

Mr. R. W. GOOLD in the chair.

Mr. T. B. LAWS (the secretary) stated that a special meeting was to have been held for the purpose of declaring forfeited all shares in arrear of call. However, all the calls having been paid there were no shares to forfeit.

Mr. CLIFT enquired on behalf of Mr. Davis, whose shares were forfeited at a previous meeting, whether upon the payment of the calls due from him, with interest, &c., his forfeited shares should be restored?

After some discussion it was decided that the question could not be entertained until the money due, to place the company in the position in which it would have stood had the calls been paid at the proper time, should be offered. It would then be for the shareholders to decide whether or not the shares should be restored.

Mr. LAWS then read the notice convening the ordinary meeting, and the minutes of the previous meeting, which were confirmed. The minutes of the committee meetings were then read. The statement of accounts, showing an estimated balance against the mine amounting to 177*l.* 18s. 8d., having already been printed and circulated amongst the shareholders, were taken as read.

The following report from Capt. Hodge was read:—

Nov. 29.—I beg to hand you my report of this mine for the general meeting to be held on the 30th inst.—Western Shaft: The 160 east end is worth 10*l.* per fm.; driving by six men, at 11*l.* per fathom. The 160 west end is worth 6*l.* per fathom; driving by two men, at 8*l.* per fathom. The 150 east end is worth 9*l.* per fathom; driving by two men, at 8*l.* 10s. per fathom. The stope below the 150 east level is worth 8*l.* per fathom; stoping by four men, at 5s. 3d. per ton. The stope in the back of the 150 east level is worth 8*l.* per fathom; stoping by four men, at 5s. 6d. per ton. The stope in the back of the 150, east of Rodda's, is worth 7*l.* per fm.; stoping by four men, at 7s. per ton. The stope in the back of the 150, west level, is worth 7*l.* per fathom; stoping by two men, at 5s. per ton. The stope in the bottom of the 130, east level, is worth 12*l.* per fathom; stoping by six men, at 5. 9d. per ton. The stope in back of the 130, east level, is worth 12*l.* per fm.; stoping by six men, at 6s per ton. The stope in the back of the 130, east of Davies, is worth 7*l.* per fathom; stoping by six men, at 4s. 9d. per ton. The 120 fm. level east end is worth 6*l.* per fathom; stoping by two men, at 8*l.* per fathom.—North Shaft: The rise in the back of the 140 fm. level is worth for the length of rise (9 ft.) about 11*l.* per fathom. I hope to communicate this lode with the stope in the bottom of the 130 in about a month from the present time, when these two levels will be well ventilated. These levels are rising by six men, at 18*l.* per fm. The stope in the bottom of the 130, east level, is worth 12*l.* per fathom; stoping by eight men, at 7s. per ton. The 130 east end is worth 10*l.* per fathom; driving by two men, at 9*l.* 10s. per fathom. The 130 west end is producing stamping work; driving by two men, at 9*l.* per fathom. In the 130 east end, on the old lode, the lode is 3 ft. wide, worth 5*l.* per fathom—a very promising lode: judging from the lode gone down in the level above I think that we are just entering a run of profitable ground. We have 27 men working on tribute varying from 8s. 6d. to 14s. 4d. in 1*l.*, to be paid 42*l.* a ton for black tin. We sold to-day 17 tons 8 cwts. 3 qrs. 5 lbs of tin, at 49*l.* per ton, realising 852*l.* 14s. 2d., and have about 20*l.* worth of copper ore fit for market. We have employed—Tutwork men, 69; tributers, 27; surface, 37; surface boys and girls, 70; total persons employed, 193. The mine continues to look very well, and with more stamping power our returns could be largely increased.—T. HODGE.

Mr. KINNEAR asked how it happened that the company's tin was always sold to one purchaser—the Bissoe Smelting Company?——Capt. HODGE replied that he had tried several other firms, but he found that he could not get so large a price elsewhere.

Mr. KINNEAR said he thought the system of sale by tender should be adopted.

The CHAIRMAN replied that, generally speaking, he was in favour of tenders, but in this instance Capt. Hodge had always managed to get good prices, and had bronght forward such good proofs of the advantages derived by the means he adopted, that he (the Chairman) recommended that matters should not be altered.

Capt. HODGE, in reply to a question, said the mine had no scales at present, but the ore was measured. He, however, always took care that the proper amount of ore should be credited.

Some discussion ensued on this subject, in the course of which Mr. RULE stated that too much reliance could be placed on tenders, and quoted as an instance that 17s. 6d. per ton was offered for arsenic by tender which actually realised 3*l.* 10s. per ton by private contract.

Capt. HODGE said he always sent samples of the ore, with the exception of that day's sale, which had realised 49*l.* per ton. He did not accept the offer of the Bissoe Smelting Company without trying other firms.

Mr. WADDINGTON asked how many strokes per minute the engine worked?

Capt. HODGE replied that it worked from 8½ to 9 strokes, according to the quantity of water in the mine.

Mr. LANE wished to know whether as much ground had been taken away during the past quarter as had been opened up?——Capt. HODGE in reply said at least four times as much ground had been opened up as had been taken away, and the reserves had been considerably increased. He (Capt. Hodge) in reply to a further question said he could not promise to keep the water out of the mine during the winter without some alterations or new machinery.

Mr. WADDINGTON strongly urged the purchase of new or second-hand pumping machinery, which he considered would soon pay for itself in the more economical working of the mine.

The CHAIRMAN said it gave him a good deal pleasure to see what a comparatively satisfactory balance-sheet the committee had to present. It was not more than nine months since the present management got fairly to work. At the time they took office there was an adverse balance of 5580*l.*, and there were other debts and the current expenses which increased the sum to at least 6000*l.* At the present time the committee had a clear balance-sheet to present. The whole of the 6000*l.* had been cleared away, with the exception of an item of 200*l.* for lord's dues; and he was in hopes that when the case of the company is fairly laid before the lord that amount may be written off. Taking the three last months of the old management, it would be observed that the loss per month was increasing with astonishing rapidity, from 200*l.* to 500*l.* per month, and he believed that if the same management had been continued the present liability would have been not 6000*l.* but 10,000*l.* or 12,000*l.* The losses in the last three months of the old management were 370*l.*, 556*l.*, and 405*l.*, and now Capt. Hodge anticipates that the loss on the current quarter's operations will not exceed 300*l.* In arriving at this estimate Captain Hodge had anticipated that the sale of ore that day would realise 800*l.*, but it had realised 852*l.*, besides which there was 20*l.* worth of copper ready for sale, so that his estimate would, he hoped, be considerably within the mark. The sales of tin ore had gradually increased from 487*l.* in December last to 532*l.* in January, until for the past three months they were 598*l.*, 743*l.*, and 807*l.*, and for the sale just made 852*l.* (Hear, hear.) Under these circumstances he thought it would be unwise to interfere in the system adopted by Captain Hodge for the sale of the ore; at all events while the price obtained was as good as it has lately been. With respect to the question of machinery, the committee had the matter under their serious consideration, but they would not be justified in recommending any large outlay on that head at present. Before expending any large sum on machinery he thought they should heve the opinion of the very best authorities as to the capabilities of the present machinery with alterations; and as to the cost of new or second hand machinery, should the committee find that it would be advisable to buy new, his own opinion was that the present machinery, with an outlay of 1200*l.* to 1500*l.*, would be sufficient to sink 20 or 30 fathoms deeper—a work which must be done sooner or later. And with respect to more stamping power, he thought that should also be left for consideration for the present. As to the reserves of ore, they had heard from Capt. Hodge that the reserves had been considerably increased, and he (the Chairman) quite believed that they had. The Chairman, after referring with satisfaction to the management of Captain Hodge, moved the adoption of the balance-sheet and agent's report——Mr. P. KINNEAR seconded the motion, which was carried unanimously.

A long discussion then took place with respect to the stamping power and pumping machinery. Ultimately the questions were left in the hands of the committee to make every possible enquiry as to the best course to adopt.

On the motion of the CHAIRMAN a call of 2s. per share was made, payable on or before Dec. 21, with the usual 5 per cent. discount on amounts paid on or before that date.

The meeting then closed with a vote of thanks to the Chairman.

CARN BREA MINING COMPANY.

A three-monthly meeting of adventurers was held, on Thursday, at the mine,—Capt. TEAGUE, the manager and purser, presided, and there was a large attendance of adventurers.

The statement of accounts showed that the costs had amounted to 11,278*l.*, including 6812*l.* labour costs, 3135*l.* merchants bills, 549*l.* carriage, and 220*l.* dues. In addition to this, 500*l.* has been charged on account of the extra month's costs, making the total debits 11,278*l.* The credits were for 222 tons of tin, 9840*l.*; for arsenic, 79*l.* 19s. 6d.; extra carriage, 44*l.* 5s.; and copper, 81*l.*, the loss on the three months being 494*l.* only, after allowing for the additional month's costs.

An excellent report was read by the manager, showing the aggregate value of the different points in the mine to be about 350*l.* per fathom. Capt. TEAGUE said he did not think it necessary to make a call on the present occasion, because things seemed to be brightening a little, and if the market continued to improve they would be able to avoid a call altogether. At the same time he was bound to tell them that unless they got a better price for tin before long he did not see how they would be able to escape making a call, although, of course, he should do his very best to avoid it. (Hear, hear.) But it was impossible to fight against the present price of metals. Referring to the Highburrow east shaft, which is sunk 2 fathoms below the 226, with a lode 14 ft. wide, and worth 40*l.* per fathom, Capt. TEAGUE explained that this was a new feature. It was a shaft that had cost them a good deal of money, and would, no doubt, be of great service to them. The shaft was holed, and everything was being prepared for drawing. It had been a most expensive piece of work, for every bit of stuff in the 130 had had to be drawn up by tackle, but he hoped now that they had got over the worst of it, and he was sure that in the future they would reap the benefit of the outlay they had made. It had cost them some thousands of pounds, but they were now getting into something like ship shape; they had got a lift into the shaft, and were well provided for any water that might come. (Hear, hear.) Although their costs had been heavy, he thought the adventurers would see that they were doing something for it, and it would be a very hard thing indeed if they did not get something out of all the levels that were being opened up.——The report and accounts having been passed,

Capt. TEAGUE gave an explanation of what had been done since the last meeting of the adventurers in reference to the trial of the Beaumont drill. On the last occasion he said the adventurers gave him permission to do the best he could in the matter, and since then there had been a good deal of correspondence. It was not necessary that he should enter into the details of that correspondence, but the result of it was that they had arranged for the driving of the 226 fm. level east from Highburrow west shaft. Major Beaumont had been down himself, and at a meeting held at the Tincroft account-house, at which Mr. Basset, Mr. Marriott, Mr. Rodd, of Penzance, himself, and his son were present, negociations were entered into with regard to the price that was to be paid for the drivings of the level by the machine. As a basis upon which to fix the price he suggested that they should take the average cost of the driving of the level above. No objection was raised to this; Major Beaumont went over with him to Carn Brea, and there they ascertained that the cost of driving the 213 fm. level, which was directly over the 226 fm. level, was little short of 16*l.* per fathom. There was an understanding on the part of Major Beaumont and some of the committee that 18*l.* was to be the price fixed, but he at once made an offer, although the level above did not cost much more than 15*l.* 10s. per fathom, to give 16*l.* 10s. This offer was accepted, and they were now waiting for operations to be commenced. But although the mine was to be charged at the rate of 16*l.* 10s. per fathom, that was not all that the Rock Boring Company were to receive providing they drove a certain quantity of ground per month. They calculated that 3 yards per month would be something like a fair drivage by four men, and for this amount of work and up to 4½ yards per fathom 16*l.* 10s. per fathom was paid; beyond that 23*l.* per fathom would be paid, for 6 yards 27*l.* per fathom, and for 8 yards and upwards 30*l.* per fathom.

Capt. TEAGUE, in answer to a question from Mr. Hall, explained that up to 16*l.* 10s. the mine would pay for all work that was done, but beyond that, and up to 30*l.*, it would be paid by the committee. For this purpose a subscription list had been opened, but he did not think it was yet quite completed. He (Captain Teague) stated, in reply to Mr. Harris, that if the boring company failed to come up to 4½ yards per month there was power given to put an end to the contract. He had received a letter stating that they were quite ready to commence by the prescribed time—three months from Oct. 12. Alluding again to the mine and its prospects, he (Capt. Teague) said he hoped that in future the costs of working the mine would be less than they had hitherto been, and that at the same time there would be no decrease in their returns. He thought that was quite possible, because they had been working on at Carn Brea as if they were going to have tin at 100*l.* per ton. This had not come yet, but if they had not worked in that way they must have worked to stop.—The proceedings then terminated.

TINCROFT MINING COMPANY.

A meeting of adventurers was held on Thursday, at the Carn Brea Mine, Capt. TEAGUE presiding and reading the statement of accounts, from which it appeared that, while the expenditure for the three months had been 7263*l.* 8s. 11d., the receipts were 8993*l.* 4s., on the sale of about 206 tons of tin, showing a profit on the quarter's working of 1734*l.* 15s. The agent's report was one of the best that has been presented for some time past, showing an aggregate of 280*l.* per fathom value of the various points in the mine. The accounts were passed, and a dividend of 5*s.* per share declared.

Mr. HINGSTON said he was quite sure he expressed the pleasure of all present at seeing Capt. Teague with them that day. It was rumoured in some parts of the county that morning that Captain Teague's recent illness had proved fatal, and that he had passed away from amongst them, but he was exceedingly glad to find that the delusion was dispelled by his presence at the meeting. (Applause.) He certainly was not looking so well as on former occasions, but it was nevertheless a pleasure to see him at his usual post, and he hoped his health would soon be completely re established, and that he would live long to conduct the affairs of the mine. (Hear, hear.) They had passed through very troublesome times during the last three or four years, but the cloud now appeared to have lifted somewhat, and, although not bright, it was brightening, and that which they had looked for so long was apparently now about to be realised. Capt. Teague had thrown out a hint as to the probability of a call at Carn Brea, but perhaps that was simply meant to save them from undue elation now the prospect was improving, and to prevent them from going up in a balloon. (Hear, hear, and laughter.) He moved a vote of thanks to Capt. Teague and the agents for their skilful and able management of the mine. (Applause.)

Capt. CLEMES seconded the resolution, which was carried unanimously.

Capt. TEAGUE, in acknowledging the compliment, said he was very sorry that such a rumour had got about as that to which Mr. Hingston had referred, but he was glad to say he was worth a good many dead men yet. (Hear, hear, and laughter.) It was true that he had been laid up for a week or two, but his general health was as good as ever it was. Somehow or other he had a strong desire to see Carn Brea come out all right again, and he, at any rate, hoped to live until that came to pass. (Applause.) If the price of tin improved, and he thought there was fair reason for believing that it would, they should yet do great things in Carn Brea. (Hear, hear.) They had raised more than 220 tons of tin in the last three months, and there was every chance of their being able to raise similar quantities in the future. Everything, therefore, would depend upon the price that could be obtained for the tin. The mine continued to open up favourably, and their deepest levels were the best that they had seen. (Applause.) Most of the tin that they were selling was coming from the bottom of the mine. As he said just now they had been put to a very large outlay, but he did not care much for that if their returns could be kept up in proportion. They had failed latterly to pay any dividends, but he did not despair of better times. (Hear, hear.)

The proceedings then terminated

CHONTALES CONSOLIDATD MINING COMPANY.

The sixth ordinary general meeting of shareholders was held at the offices of the company, Gresham House, on Thursday,

The Right Hon. the Earl NELSON in the chair.

Mr. J. JAMESON TRURAN (secretary) read the notice convening the meeting; the report of the directors was taken as read.

The CHAIRMAN moved that the report be accepted, and said he was prepared to give any explanation which might be required with regard to it. There was one point which required explanation The shareholders would see that the returns were put down at 3½ dwts. per ton, and Mr. Danby in his report estimated the ore treated and to be treated as bringing in 6½ dwts. per ton, but that was to be explained in this way—Mr. Danby reckoned that on each monthly return which he had given he had stated the amount of tailings which had been left untreated in consequence of imperfect reduction works, and he estimated what the untreated tailings would be, and added them to the produce which he had got out of the ore. Therefore it might be supposed that his was a too sanguine estimate; at all events, it was reckoning upon the tailings which he had treated with Varny pans, and got good returns from. The other statement with respect to these tailings was that the directors found in reckoning them that they had understated the quantity of tailings ready to be treated, because he found, by looking at a former letter of the manager's, there were already 2000 tons of tailings waiting at the mine in February, 1876, therefore, in addition to the quantity of tailings to be treated as soon as the machinery was up, there were these 2000 tons of 2 dwts. each. The directors could only give the reasons which the manager had sent over for the poor returns and the small quantity of quartz treated during the year, and it was right he should state that the directors believed the reasons which the manager had given were sufficient reasons. It was a fact that from the neglect of the former manager—during the last six months, at all events, of his residence—no wood had been procured for fuel, and therefore it was impossible, unless the manager was prepared to use the best hard wood of the country, which was good wood for fuel, but also very valuable for re-timbering the mine, unless he was prepared to do that it would be impossible to work the stamps with the steam engine, and, therefore, he was thrown back upon water-power. Again, the new manager found the mine in a very bad condition for want of timber, and therefore such wood as he had was required for the timbering of the mine. Referring to the breakage of the spur-wheel and pinion, he said that as soon as the news was received here the directors gave orders for a new one. The directors and some of the shareholders thought that an undue length of time elapsed beween the order being given and the machinery being ready to be sent out, but he was assured by Messrs. Harvey that the time was not long, inasmuch as entirely new patterns had to be prepared, and greater care in every respect had to be exercised, as it was for a foreign country. The further delay was caused by the breaking down of the Lake steamer on which the machinery was intended to be sent up to the mines, and the schooner on the lake refused to take it, as it was so heavy. He believed that sufficiently accounted for the unsatisfactory state of things in the past year since the present manager had been there. The manager reiterated his opinion and confidence in the value of the property, therefore when the pans and pluions which were now at San Ubaldo could be got to work, and the mine was put in good working order, there was every prospect that in a month or two they would be able to see whether Mr. Danby's confident expectations would be carried out. The directors believed that they would be, as Mr. Danby had never varied in his statements. With regard to making a call, it stood to reason that with those continual losses they must be getting into difficulties. The directors continued to write to the manager, telling him that a call must be made if he did not send better returns, and expressing a hope that more ore would be treated to meet expenses, but with the machinery not at work the manager was not able to send over better returns, and, therefore, the call became necessary. With regard to the stamps at the Estrella Mine, they had really worked badly from over feeding with oil, and it was reasonable to suppose that when this was remedied the stamps would work properly. As regarded the Estrella wheel, Mr. Danby was not answerable about that, and the fact was that the previous manager had made a "race" and brought the water to the wheel, and it was afterwards found that the wheel was out of order, and Mr. Danby was obliged to purchase and utilise a turbine which was already in the neighbourhood. Again, it must be borne in mind that Mr. Danby had to really re timber the mine. In his report on the East San Benito Mine the manager wrote:—

"We have driven during the six months 160 varas in this mine, and risen about 76 varas. We have re-timbered 110 varas of the levels and air courses, consuming 382 pieces of timber and 4300 laths."

As a proof of the efficient way in which the work had been carried out, he might mention that during the recent floods the mine had not been injured. As regarded the future, there was no doubt that the company was in a somewhat critical position, and until the machinery was got up they could not expect good returns. The machinery was now within 60 miles of the mine, and the arrangements which had been made for the reception over there of the machinery and forwarding it to the mine seem to have been good. He referred to the appointment as cashier at the mine of Mr. Ellis, and said he believed that gentleman would prove of great service at the mine. In conclusion, he (the Chairman) moved the adoption of the report and accounts.——Mr. PARKE PITTAR seconded the resolution.

Mr. PALMER said that the shareholders had a right to expect a dividend of 10 per cent. instead of a loss. In 1874 they had a profit of 4000*l.* with 24 stamps, and now there were 42 stamps, and he contended that the unsatisfactory result had arisen from bad management at the mine. He believed there was any quantity of ore in the mine, but proper judgment had not been used in getting it out. He also thought that there should not have been any want of fuel, considering the large extent of woodlands in the district. He thought the information given to the shareholders had been somewhat meagre. He asked about the labour at the mine.

The SECRETARY said the manager had found some difficulty in getting skilled labour, but not ordinary labour.

Mr. PALMER said he had confidence in Mr. Danby, and hoped in two or three months the regular returns he hoped for would be received.

The CHAIRMAN thought the shareholders would agree that the report was full, and any further information which was required could be obtained at the office, and was sent very fully to the newspapers. With respect to the fuel, it was true there was plenty of wood, but when the new manager arrived it was damp, no proper amount of wood having been cut and dried. There was every reason to believe that in future this would be avoided. It was believed the Wheeler pans would give 25 per cent. more produce than under the old process.

The SECRETARY said that under ordinary circumstances the machinery, which was now 60 miles from the mine, could be got up in a week, but the present wet season had delayed the transport.

Mr. TURNBULL thought the company had suffered very much from the bad management of Mr. Smeddle, and that this company, with other similar undertakings, suffered from the want of proper information from the mine.

The CHAIRMAN said that the directors had always impressed upon the manager the necessity of sending home absolutely correct reports from the mine, so that the directors might be fully informed with regard to the position of the mine, and he believed that the present manager was sending in correct reports. The present financial position was this:—There was cash at bankers, 329*l.*; arrears of calls, 823*l.*, of which 140*l.* had been received this morning, and 200*l.* promised next month; the cash in transit, 500*l.*; at mine, 300*l.*; making 1782*l.*; and liabilities, 300*l.* Of course if the machinery did not soon get to work, and no returns came forward, the company would be in a somewhat critical position. The only reason why there had been a falling off had been because the machinery had not been able to work.

After some further discussion the report was adopted.

The retiring directors—Mr. J. O. Hanson and Mr. Charles S. Hill—were re-elected, and Mr. W. F. Moates was re-appointed auditor.

A vote of thanks to the Chairman and directors closed the proceedings.

IRON AND METAL TRADES' COMPANION.—Under this title a new Ready Reckoner for the Iron Trade, by Mr. THOMAS DOWNIE, of Glasgow, has just been published by Messrs. Crosby Lockwood and Co., of Stationers' Hall-court. It appears that to economise his valuable time Mr. Downie constructed a set of tables for his private use, involving 52,038 separate calculations, giving the exact value of any parcel whatever of iron or other metal—the price per pound, per cwt., or per ton being known—by mere addition or subtraction, instead of multiplication, so that even those who have not learned the multiplication table can accurately determine, by not more than two references, how much he ought to pay or receive. Supposing, for example, he desires to ascertain the value of 8 tons of phosphor bronze at 100*l.* per ton, he could quickly do so, with the tables to assist him, by two or three separate methods. He would first consider that 8 tons contains 160 cwts., and then turning to pages 341 and 342, would find that 160 cwts. at 98*l.* per ton, is worth 784*l.*; next turning to pages 9 and 10 (because 98*l.* and 2*l.* are equal to 100*l.*) he would further ascertain that 160 cwts. at 2*l.* per ton is worth 16*l.*; and lastly, adding 784*l.* and 16*l.* together, he obtains 800*l.*, which is the correct amount. Or, more briefly, although in that case he would have to apply multiplication and division, he could halve the 100*l.*, and turning to pages 281 and 282, he would find that 160 cwts. at 50*l.* per ton is worth 400*l.*, so that a similar parcel at 100*l.* would be worth twice that sum, or 800*l.*, which is the correct amount, as before. Or he could take from the tables the value of the 160 cwts. at 100*l.* 6s. 8d. per ton, and then calculate the value of the same quantity at 6s. 8d. per ton, and deduct; in fact, the methods of obtaining the result are almost innumerable, and all are quite as simple as those ex-

plained. By way of appendix Mr. Downie gives explanations of certain algebraic symbols, tables of common and metric weights and measures, explanations of decimal fractions, extraction of the square and cube roots (though in the proof of the latter there is an error), rules of mensuration, tables of gravities, weights of materials, &c. The book gives evidence of a large amount of labour having been expended upon it, and will be highly appreciated by all who have occasion to refer to guides of this character.

QUALITATIVE CHEMICAL ANALYSIS.

Few students of chemistry have failed to appreciate the enormous assistance derived from tables showing in prominent outline the several steps of the analysis, and the method of deciphering the results obtained. The "Giesson Outlines of Analysis," the Tables in Galloway's "First Step," and subsequent treatises, and the elaborate set founded on Rose, by the late Dr. Normandy, are well known in most laboratories, and less generally used tables are very numerous both in English and German; another and very valuable addition to the number has now been made by Prof. Snively, of the Tennessee College of Pharmacy,* the chief recommendation of this series being that the best of those already in use and most approved have been carefully selected and combined. The tables are very concise and clearly printed, and as only such confirmatory tests are given as are applicable to the sought-for substance in the state in which it is separated in the process of analysis, or which will give satisfactory results in complex mixtures, the student's chances of failure are considerably reduced. The entire preliminary examination of a solid is described in a single one-page table, whilst the four tables on the next page explain the method of converting the various kinds of solids into a liquid, examination of a solid insoluble in water or acids, examination of the same for potash and soda, and the preliminary examination of a liquid. In the sixth table the first vertical line is, by a typographical error, not carried high enough, so that a white precipitate of lead is shown as following the addition of the sulphuretted hydrogen; this can, of course, be instantly rectified with a pen. This table is but a couple of inches deep, yet shows the whole of the steps for getting the six principal groups, which have subsequently to be tested for ascertaining the particular metals present. The remaining tables—there are fifteen in all—are equally succinct and explicit, whilst an index of symbols greatly facilitates their use; five pages of notes, in which each table is referred to, giving the student all the information he will require to enable him to derive the utmost possible advantage from consulting more voluminous works.

Prof. Snively has displayed much care and judgment in the arrangement of the tables, and for aiding the memory, with regard to the facts and order of procedure explained by a teacher, the student will find them invaluable

* "Tables for Systematic Qualitative Chemical Analysis." By J. H. SNIVELY, Ph.D., Professor of Analytical Chemistry in the Tennessee College of Pharmacy. Nashville: C. W. Smith, Church street.

FOREIGN MINING AND METALLURGY.

The iron trade in the French department of the Nord is considered to have experienced a slight improvement in this sense,—although it may not be possible to sell the iron made for more money, it is, at any rate, practicable to produce it upon cheaper terms, in consequence of the reduction which has occurred during the last few months in the price of coal. The direct exports of iron and plates from France in the first 10 months of this year amounted to 65,500 tons, as compared with 70,000 tons in the corresponding period of 1875. Upon the whole, it must be admitted that the situation is not sensibly better than it was a year since, and that the hopes conceived of a revival in affairs have not been confirmed by actual experience. In the Nord and in the Ardennes 7*l.* 4s. per ton has been made for first-class iron. In the basin of the Loire prices have not varied At Longwy a syndicate has been formed with the view of checking the successive reductions which have taken place in pig. This syndicate, which comprises M. L'Abbé, the Baron d'Aldesward, and the Saulnes and Providence companies, has been formed for two years; its object is to maintain the price of No. 3 casting pig at a minimum of 3*l.* 8s. per ton.

In the Nord and the Pas-de-Calais coal mining operations are being carried on with a fair amount of activity, but the demand has, nevertheless, remained rather weak, and the supply of railway rolling stock is more than adequate to meet current orders. The state of affairs is not worse than it was at the commencement of the season, but, at the same time, it is not better. The beetroot sugar season appears to be now admittedly a bad one; the juice of the beetroot is very weak in sugar, and manufacturers are abandoning working operations, which are not likely to prove sufficiently remunerative. The hopes conceived, or affected to be conceived, by some coalowners with respect to a revival in metallurgical industry have not been realised, so that altogether there is general disappointment. Coke has been selling in the basin of the Nord at 15s. 2*d.* per ton. At St. Etienne coal quotations have been maintained with tolerable firmness. The profits realised by the Lens Mines Company in 1875-6 amounted to 172,179*l.*, of which 120,000*l.* will be distributed to the shareholders in the shape of a dividend of 40*l.* per share. The reserve fund stands at 50,375*l.* The extraction effected by the company in 1875-6 amounted to 691,562 tons, against 725,636 tons in 1874-5. The sales made in 1875-6 amounted to 614,783 tons, against 677,788 tons in 1874-5.

There is still an absence of animation in the Belgian iron trade. Confidence in the future is still lacking, and it appears impossible to assign a term to the prolonged crisis in affairs. At the last metallurgical bourse at Brussels there was a large attendance, but very little business was passing, and there were almost general complaints of well nigh universal depression. An indication of the slackening in business has been furnished in the Grand Duchy of Luxembourg, which sends into Belgium the greater part of the pig which it makes. Thus, the Luxembourg Blast-Furnaces Company, at Esch-sur-Alzette, has blown-out a blast-furnace producing 3000 tons per month. At Hollericht, again, MM. Servais have also allowed their last blast-furnaces to die out. The house of Mets and Co., which extinguished three of its blast-furnaces some time since, is reducing the production of those remaining in activity, their output having been reduced to 60 tons per day, when they could make 80 tons per day. The price of pig in this group has fallen to 1*l.* 18s. 4d. at the furnace mouth, but upon the production being reduced to 6000 tons per month the quotation will, probably, rally to 2*l.* per ton, which, after all, will not be very remunerative. The Chapelle-lez-Herlaimont and Carnière Forges and Workshops Company has resolved on establishing new ironworks. The speciality of this company is the manufacture of bolts, nuts, &c., as well as forgings connected with the working of railways, collieries, and quarries. The Ougrée Ironworks Company proposes to add to its establishment several new furnaces, including a rotary furnace on the Pernot system. A contract is about to be let at Dresden for 9000 tons of Bessemer steel rails, to meet the requirements of the German State railways. The South of Charleroi Blast-Furnaces Company sustained a loss of 9785*l.* in its financial year ending June 30, 1870. This loss increases the whole amount lost by the company to 26,868*l.*, or nearly half its capital of 60,000*l.* The Boussu Construction Workshops Company realised in its financial year a net profit of 2143*l.*; this admitted of the distribution of a dividend of 12s. per share, or 3 per cent. per annum. A Belgian company has been organised for the working of the Mardy Colliery, in the Rhymney Valley; the capital of this company has been fixed at 18,000*l.*

There is little fresh to report with respect to the Belgian coal trade. The extraction is being carried on upon a large scale, and deliveries are being made as freely as possible, especially as regards coal for domestic purposes. The general situation remains much the same. The Belle-et-Bonne Colliery Company will pay on Dec. 20 a dividend for the first six months of 1876, at the rate of 2*l.* 3s. 3*d.* per share.

The Paris copper market has remained without animation, but at the same time without notable change. Chilian in bars has made 82*l.* 10s.; ditto, ordinary descriptions, 81*l.*; ditto, in ingots, 82*l.*; English tough cake, 83*l.*; and Corocoro minerals, 81*l.* per ton. At Marseilles copper has become quieter. The aspect of the German copper markets has not experienced any material change; transactions have been limited to the requirements of consumption, but prices have been well supported. The tone of the Dutch tin markets has become more speculative, and holders have refused to sell Banca below 47 fls., and Billiton below 46 fls. Quotations for tin have been pretty well sustained at Paris, but transactions have made default to some extent. Banca, delivered at Havre or Paris, has brought 82*l.*; Billiton, ditto, 81*l.*; Straits ditto, 82*l.*, and English, delivered at Havre or Rouen, 80*l.* 10s. The German tin markets have exhibited rather a feeble tone. Lead has been pretty well supported upon the Paris market. French, Belgian, and German lead has brought 21*l.* 12s. per ton; and Spanish and English 21*l.* 8s. per ton. In consequence of the scarcity of immediately available supplies the German lead markets have ruled very firm. There has been little business passing in zinc at Paris; prices have remained without variation. Silesian, delivered at Havre, has brought 23*l.* 12s.; and other good marks, 23*l.* 8s. per ton. Transactions in zinc have been very restricted upon the German markets, and quotations have been established with some difficulty.

Registration of New Companies.

The following joint-stock companies have been duly registered:—

NEW BILSON, CRUMP MEADOW, FOXES' BRIDGE, AND CENTRAL COLLIERIES (Limited).—Capital 200,000*l.*, in 10*l.* shares. To adopt and carry out an agreement for the purchase and working of collieries, made between John Trotter, T. S. J. Thomas, Tom Goold, John Crow Richardson, C. T. Wilson, Arnold Thomas, and R. S. Hudson of the one part, and John S. Feast on behalf of the company. The locality of the various properties is not stated. The subscribers (who take one share each) are—R. Eaton James, 2, Moorgate-street, accountant; H. Russell Evans, 52, Lombard street, financier; A. C. Heale, 27, Aldermanbury, accountant; J. S. Feast, 2, Moorgate-street, accountant; F. Crisp, 6, Old Jewry, solicitor; W. H. Adams, 43, James' Grove, Peckham, accountant; Albert Vickers, 41, Alrington-crescent, Hackney, accountant. The directors are Messrs. Tom Goold, Robert Parnall, and C. T. Wilson, the qualification being the holding of 100 shares, and the remuneration 800*l.* per annum, to be divided.

BWLLFA AND MERTHYR DARE COLLIERY COMPANY (Limited.)—Capital 130,000*l.*, in 20*l.* shares. To carry on business as coalowners, ironmasters, &c., and for that purpose to acquire certain collieries. The subscribers (who take one share each) are—Alexander Brogden, M.P., 31, Prince's Gate, W.; H. Brogden, Hale Lode, Altrincham, ironmaster; James Brogden, Port Carth, Glamorgan, ironmaster; John Noble, 92, Garsford-street, N.W., gentleman; J. O Middleton, 1, Ebenezer terrace, Plumstead Common, gentleman; J. O. Johnston, 4, Redcliffe road, West Brompton, accountant; C. H. Darbyshire, C.E., Addson Gardens, W. The directors are Messrs. Alexander Brogden, H. Brogden, and J. Brogden, the qualification being the holding of 20 shares.

GREAT MALVERN HOTEL, SANITORIUM, AND WINTER GARDENS COMPANY (Limited).—Capital 50,000*l.*, in 1*l.* shares. To acquire the Imperial Hotel, Great Malvern, and to effect various improvements, &c. The subscribers are—G. S. Bake, Bodmin and New City Club, 1; Samuel Fairclough, Army and Navy Club, 20; J. Jay, Litley Court, Halford, 5; John Vibart, Brecon, 5; G. Graham, Great Malvern, 20; John Cole, Army and Navy Club; Thos. Alexander, Mon Repas House, Kent, 5.

C. A. WALTERS AND CO. (Limited).—Capital 25,000*l.*, in 20*l.* shares. To purchase the business of Mr. C. A. Walters, coal merchant, of Newcastle Wharf, Warwick-road, Kensington. The subscribers are—C. A. Walters, 7, Holland-road, Kensington, 150; C. B. Carston, 197, Goldhawke-road, Hammersmith, 5; H. Craven, Gunnersbury, 5; A. E. Bradford, Sunnyside, Broderick-road, Tooting, 100; A. G. Barnett, Hampstead, Henley on-Thames, 150; G. Sturgeon, Grove House, Kennington, 5.

TOWYN PIER COMPANY.—Capital 12,000*l.*, in 5*l.* shares. To construct a pier at Towyn, Merionett. The subscribers (all of Towyn) are—William Pany, O. Daniel, R. G. Price, H. Jones, R. J. Roberts, E. Jones, and R. Hammond.

COFFEE TAVERN COMPANY (Limited).—Capital 10,000*l.*, in 1*l.* shares. To carry on business as refreshment-house keepers. The subscribers are—Thomas Hughes, Q.C., 80, Park-street, 10; Norman Sharp, 42, Grove road, St. John's Wood; R. M. Gorton, 158, Albany-street, Regent's Park, 10; A. G. Crowder, 65, Portland place, 10; R. M. R. Pope, 26, Old square, Lincoln's Inn, 5; E. Hart, 5, Queen Anne street, 5.

PANDORA LEAD MINING COMPANY (Limited).—Capital 24,000*l.*, in 2*l.* shares. To adopt an agreement made between Mr. J. J Pyne, the liquidator of the Willoughby Mining Company and Mr. J. C. Hill, of Lincoln's Inn-fields, whereby the company proposes to purchase and work the Willoughby Mines on the Gwydr Estate, parish of Llanrochwyn, Carnarvon, and other property and effects. The purchase consideration is 18,000*l.*, of which 100*l.* will be paid in cash. The subscribers (who take 50 shares each) are—Samuel York, Shifnal, Salop, merchant; C. J. Hill, Lincoln's Inn, barrister; J. J. Pyne, 6, Bishopsgate street Within; J. H. Murchison, 8, Austinfriars, mining engineer; J. H. Crofts, 1, Finch-lane, broker; A. J. Crofts, 1, Finch-lane, clerk; William Hitchcock, Totnes Villa, Queen's-road, South Norwood. The directors are—Messrs. Samuel York, C. J. Hill, and J. J. Pyne, the qualification being the holding of 50 shares, and the remuneration being 100*l.* per annum, with an additional 100*l.* for every 5 per cent. of dividend above the first 5 per cent. until 500*l.* shall be reached.

LLANGENNECH TIN PLATE COMPANY (Limited).—Capital 50,000*l.*, in 50*l.* shares. To manufacture iron, tin, and terne-plates, and to carry on the business of an iron and tin mining company in all its branches. The company will also work for coal and cannel. The subscribers are—William Earl Dodge, 11, Cliff-street, New York City, merchant, 25; D. W. James, 11, Cliff street, New York, merchant, 400; James Stokes, 11, Cliff-street, New York, merchant, 25; William Earl Dodge, jun., 11, Cliff street, merchant, 4 0; William Daniel Lees, 26, Chapel-street, Liverpool, merchant, 25; Anson Phelphs Stokes, 11, Cliff street, New York, merchant, 25; Thomas Stokes, 11, Cliff street, New York, merchant, 25; J. A. James, 26, Chapel street, Liverpool, merchant, 25. The directors are—Messrs. W. E. Dodge, the younger, Daniel William James, Anson P. Stokes, and W. D. Rees, the qualification being the holding of 25 shares.

GREENHITHE CHALK COMPANY (Limited).—Capital 10,000*l.*, in 10*l.* shares. To acquire the lease and premises, stock in trade, and effects of Messrs. B. Roberts and George Nolan, at Greenhithe, Kent, known as the Greenhithe Chalk Company, the lease being for 80 years from 1874, at a yearly rental of 320*l.* The subscribers are—H. G. Ashurst, 9, Fenchurch street, merchant, 25; Joseph Morton, 39, Cheapside, cutler, 25; William Macgeorge, Whynford Villa, Belvedere, Kent, engineer, 25; Joseph Weedon Previte, 150, Leadenhall-street, merchant, 25; Henry Wilson, Park House, Maida Hill, gentleman, 25; Benjamin Roberts, Dalehill House, Anerley, manager to a company, 150; George Nolan, 85, Gracechurch-street, secretary. The directors are not yet appointed, but the qualification is fixed at 25 shares.

REVERSION MORTGAGE COMPANY (Limited).—Capital 100,000*l.*, in 19,960 shares, of 5*l.* each, and 200 of 1*l.* To make advances on mortgage of reversionary and life interests, &c. The subscribers (who take one share each) are—Robert Miles, 15, Coleman-street; Wm. Standing, 63, Queen Victoria street, E.C.; John Lord, 6, Albert road, Abbey road, St. John's Wood; John Walker, Oxford House, Crydon; Joseph W. Crew, 28, New Broad street; C. D. S. Alexander, 203, Camberwell-road; T. H. Eyre, Shirley House, Clapham.

LONDON METAL EXCHANGE COMPANY (Limited).—Capital 200*l.*, in 50*l.* shares. To establish an exchange for the metal trade. The subscribers (who are either metal brokers or merchants) are—P. W. Spence, 17, Gracechurch street; A. Bird, 4, Cullum-street; W. Sargent, 6, Mincing lane; A. R. James, Gresham House; G. W. N. Dadelzen, 4 and 5, East Indis Avenue; F. H. Bond, 117, Leadenhall street; F. Fung, 118, Leadenhall street. The office is in Lombard court.

FYLDE BREWERY COMPANY (Limited).—Capital 5000*l.*, in 10*l.* shares. To acquire a brewery in Lancashire.

RESPONSIBILITY OF DIRECTORS AND SHAREHOLDERS.

COMMON PLEAS DIVISION.

(Before Lord Chief Justice COLERIDGE and Special Juries.)

The action, Thomson *v.* Carnegie, was by a shareholder of the Allt-y-Crib Silver-Lead Mining Company against a director, to recover back the amount paid for shares and debentures which it was alleged the plaintiff had bought on the faith of fraudulent representations made by the defendant. The charges made by the plaintiff were:—Firstly, that the defendant had represented to the plaintiff that all the shares of the company had been placed, and that the defendant had fraudulently concealed from the plaintiff the fact that the dividend which had been paid by the company had not been earned. On the faith of this alleged representation and by means of this alleged concealment the plaintiff said he had taken 50 shares in the company on two separate occasions, making 100 shares in all. Secondly, it was charged that the defendant had represented to the plaintiff that the debentures of the company were a safe and profitable investment when the company was really insolvent, and that the plaintiff had, on the faith of such representation taken debentures. The third charge was that the defendant, being a director, negligently acted in and about the management of the company's affairs, and recklessly and without due enquiry made and sanctioned representations as to the position and solvency of the company which were in fact untrue, which caused the plaintiff to believe that the debentures would be a good and safe investment. For the plaintiff were Mr. Morgan Howard, Q.C., and Mr. Lamaison; for the defendant, Mr. Day, Q.C., and Mr. Holl.

At the conclusion of the case for the plaintiff Mr. DAY submitted to the Lord Chief Justice that there was no evidence against the defendant of the charges made against him.

The LORD CHIEF JUSTICE: I am strongly of your opinion Mr. Day, and when I come to speak to the jury I shall have something to say on that subject; but I shall not withdraw the case from the jury. His lordship continued to say that, in his opinion, no evidence had been brought to connect the defendant with the charges made in the first two counts of the declaration. With regard to the third count (that which charged negligence) it was impossible to say what human being might not be caught. With regard to the dividend paid, but not earned, it appeared that the defendant, as director, opposed the payment of the dividend, but was outvoted by the shareholders; and if a director was to be charged with fraud merely because he was outvoted, really we could not know where we should be.

Mr. DAY then addressed the jury for the defence, but confined himself to saying that he should call Mr. Carnegie to repel the charges made against him, he knew not from what material.

The defendant then went into the box, but after one or two questions the jury intimated that they thought the plaintiff had made out no case.

Thereupon Mr. Day closed the case for the defence.

Mr. MORGAN HOWARD replied on the whole case, and contended that, as regards the debentures, at any rate, the plaintiff had made out his case. The defendant, as a director, should have taken care to inform the plaintiff of the state of the company's affair when the circular inviting applications for debentures was sent to him.

The LORD CHIEF JUSTICE, in addressing the jury, said that the judges in this country were certainly not wanting in a desire to fix with fraud persons who ought to be so fixed. If a person deliberately suppressed the truth, or made fradulent statements by which innocent people were induced to part with their money, his lordship would draw the line as stiffly as anyone. But a charge of fraud ought to be made with great care and sustained by clear evidence. Going through the charges one by one, his lordship said he found not a vestige of evidence to support the first two charges. With regard to the debentures, it had been said that the defendant ought to have set out the order of the shareholders authorising the directors to raise debentures, and to have told the plaintiff the circumstances under which the debentures were issued. But the plaintiff had the same means of knowing as any other shareholder; he might have attended the meeting or learnt what had been done. His lordship concluded by remarking that it would not have been necessary for him to address the jury had not the plaintiff thought fit to persist in his charges to the end.—Verdict for the defendant.

THE WILD DUCK, OR SPORTSMAN'S ARMS

"Well, here we are again, hearty and strong," says Uncle Henry Treylon, "and if a man don't feel fine and comfortable like after such a denner as that I don't know what to say to un." "Nor I," says Jan Jewill, "for semmen to me our denners are getting better and better, and Becky is a better cook thun the that cock their noses much higher; and the beauty of it, men, is she is honest, for whatever you put in her hands you get back again, but that's more than you can say for grander places." "Well, men," says Cousin Will, "is there anything new since last meeting?" "I don't know," says Jan Temby, "if there is anything particular new; but since then I took it in my head to look about a bit. "That's right, Jan," says Jemmy Dowa, "for thee art always finding out something new, so throw to un, Jan." "Well, I first had a look over the Old Weeth bal, then went on to Carnhall Green, and across to Bennar Downs, then over lots of old bals—Herland, Relistian, Wheal Alfred, and so on. At last I found myself in Relubbus and Goldsinney, and here I thoft 'twas time to have a pint of ale and eat my pasty. While I wor here a man come in, and I knowed a was an old miner so soon as I see'd un, and fillin' a glass of beer said, 'Here, stranger, try a glass and corner of pasty.' 'Well,' said he, 'I don't like to refuse, so here's towards your good health.' 'Thank ee,' says I, 'and here, young woman, bring another pint.' Well, we had pint after pint, till we wor the best friends in the world." I suppose,' says Peter Luke, for that was my friend's name, 'you'll stop here to-night?' 'I was thinking,' I said, 'to go to market—I see, after all, 'tis best to stay where I am.' 'Now,' says Peter, 'I don't want to know any man's business, but you'r a stranger here, and ef I can do anything for ee I will.' 'I'm sure,' I said, 'you'r the very man I want to mit—that is,' I said, 'a old experienced miner.' 'Well, I am,' he said, 'and can tell ee all about Great Wheal Neptune, Wheal Caroline, and all the first run of new mines in the Perran cliffs; for,' said he, 'we'e surrounded with good mines here, and none of them proved in depth. I tell ee,' says Peter, 'the time will come when this here will turn up one of the greatest copper mining districts in Cornwall; and if you'll go home with me to-night we'll have a long day of it to-morrow.' So home I went with Peter, and I never mit a kinder family. Well, next morning we went to Perran Church Town, and over all the mines in the district, also all about Relubbus, where we parted; but Peter will come to our next mittin, ef a can. People may say what the mind to, but I say that Goldsinney, &c., is a grand mining district. I then struck across the country to have a look at the cliffs, then to Tregoning Hill, and across to Crenver and Wheal Abraham, and up to Crowan Church Town, Crowan Bicken, Hangman Burrow, and back here once more. All I can say, then, is this here—I have been over scores, iss, hundreds of good mines this week without touching old deep mines; but I look upon a mine in a good district only 70 or 80 fms. deep as a mine just begun. Peter Luke and I had a long discourse about the run of lodes, and ef the run through a county for miles or come to an end. Peter ded loff, to be sure, and said ef the come to a end where ded the begin?" "That's ov'n, old fellow," says Jemmy Dowa. "I'll finish in a minnit," says Jan Temby, "for Peter and I discoosed about other things besides the east and west run of lodes, and we both think if there was no cross-cooses, slides, fluccans, and so on the lodes wouldn't do much good, and I tell ee, men, let all the cross-cooses in the county (beginning at the Valley Do'coath) be carefully traced north and south, from sea to sea, and every different channel of ground marked down that the pass through, and I'll bet what you mind to that more and richer bals will be found than hunting east and west of a rich one." "I'm sure," says Uncle Henry, "we're all very much obliged to Jan Temby for the pleasant account of his travels, and we're bound to show every kindness to Peter Luke next mitten." "There's an old saying," says Cousin Will, "that 'ore makes against ore,' but without some probably unseen connecting links I cannot conceive why this should be so. For instance, there are two parallel lodes 100 ft. asunder. Now, according to this theory, if there is a course of ore in one lode there must also be a course of ore in the other lode just opposite, or 'ore against ore.' I think, however, that Jan Temby's suggestion of tracing the cross-courses north and south from sea to sea would lead to the most important discoveries ever made in the county of Cornwall." "So do I, too," says Uncle Tom. "I was going to tell ee about a cunder'd-holy, but tes too late now, and I must go home, for the boy Jacky have got a sore throat, and can't chow nor chink." "Put a blister to his huddick," says Jemmy Dowa.—*Cousin Jack's Unpublished MS.*

IMPROVEMENTS IN BLAST-FURNACES.—The invention of Messrs. HERON and KENYON, of Maryport, Cumberland, has for its object improvements in blast-furnaces whereby they may be used as either open or close topped furnaces, and at the same time afford increased smelting capacity for a given size of furnace, and consists in dispensing with the usual bell for opening and closing the top of the furnace and extending the top of the furnace a certain distance above the usual platform and closing the orifice at the top with a metallic disc plate or register, suspended at the end of a lever arm, which is capable of turning upon a vertical axis in order to remove the disc plate or register out of the way when the furnace is used as an open-topped furnace. For feeding blast-furnaces constructed in accordance with this invention they form a series of openings into the furnace at a lower level than the platform and communicating with shoots or hoppers in such platform; vertical dampers being employed for closing the communication between the furnace and such hoppers whilst they are being fed with the fuel ore and other material, and flap doors being fitted to the shoots on a level with the floor of the platform. We further apply perforated dampers in the passages between the interior of the furnace and the usual annular flue surrounding the top of blast-furnaces in order to prevent small particles of the material passing through, and which otherwise would tend to choke up such flue. Relief valves or doors opening outwards being also applied to such annular flue to prevent accident from an undue accumulation of gases. This invention further relates to the construction of bogies employed for transporting the slag or refuse from blast-furnaces to its destination, and consists in constructing the side and ends of such bogies of cast-iron plates which, with the exception of the front, are all secured rigidly to the bottom of the bogie. The two sides of the bogie instead of being parallel as hitherto are arranged to diverge towards the front which is mounted on vertical hinges, and is thus capable of being turned completely back against the side, in which position it is secured whilst the contents of the bogie are being tipped. The removal of the contents of the bogie being facilitated by the application of a moveable plate to the back or narrowest end of the bogie and which plate is capable of being forced forward by means of a screw.

THE MINERS' ASSOCIATION OF CORNWALL AND DEVON is going to take a very excellent practical step. It is about to have a bronze medal struck, to be awarded as an honorary distinction to all its students who reach a certain standard. This will be fixed very high, so that the medal will be a very real distinction indeed. The conditions will be made known very shortly. The die will be executed by Mr. Wyon, and the medal will bear on one side the Arms of Cornwall, with those of Exeter as representing Devon, which county has no arms of its own.

NEW WHEAL CHARLOTTE.—Mr. Elisha Tregellas, of St. Agnes, has shown great industry in re starting Charlotte United. It may afford interest to say the engine went to work last week for the first time.

PROPOSED TESTIMONIAL TO MR. TREGELLAS.—On Thursday night a meeting was held in the vestry room, St. Agnes, for the purpose of considering what steps should be taken towards the presentation of a testimonial to Mr. E Tregellas for the energy and public spirit he has displayed in starting the Charlotte United Mine, situated in that parish, notwithstanding the present low ebb of mining undertakings. A committee was appointed in furtherance of the undertaking.—*West Briton.*

I.X.L.—At the I.X.L. mill this forenoon three men were injured by the falling of a portion of the boiler house now in course of erection; but one, Daniel W. Davis, was seriously injured, and he was immediately sent to Genoa for treatment. Thomas James and John Padkins escaped with slight bruises.——EXMOUTH.—The ledge struck last week in the 400 *ft.* level is 25 ft. wide, and contains a 30 inch vein of rich ore. Ore continues to be hauled to the mill.——I.X.L.: Orders have been received from London to put on additional force and resume sinking. Work in that direction will commence at once.—*Alpine Chronicle*, Nov. 4.

BLAKE'S PATENT STEAM PUMP.

MORE THAN 10,000 IN USE.

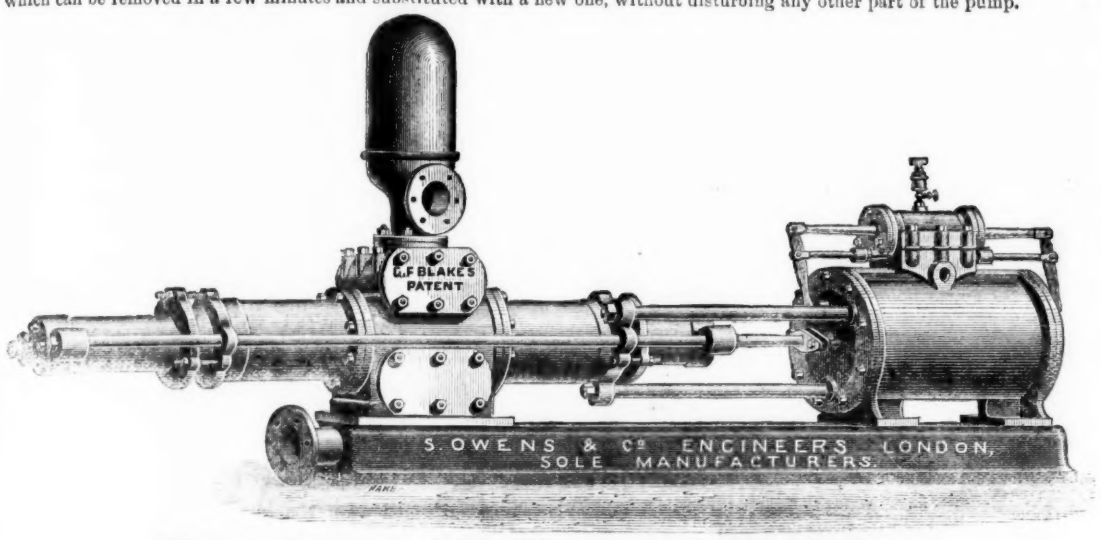
SOLE MAKERS FOR GREAT BRITAIN,

S. OWENS & CO.,

Hydraulic and General Engineers, Whitefriars-street, London;

And at 195, Buchanan-street, Glasgow (W. HUME, AGENT).

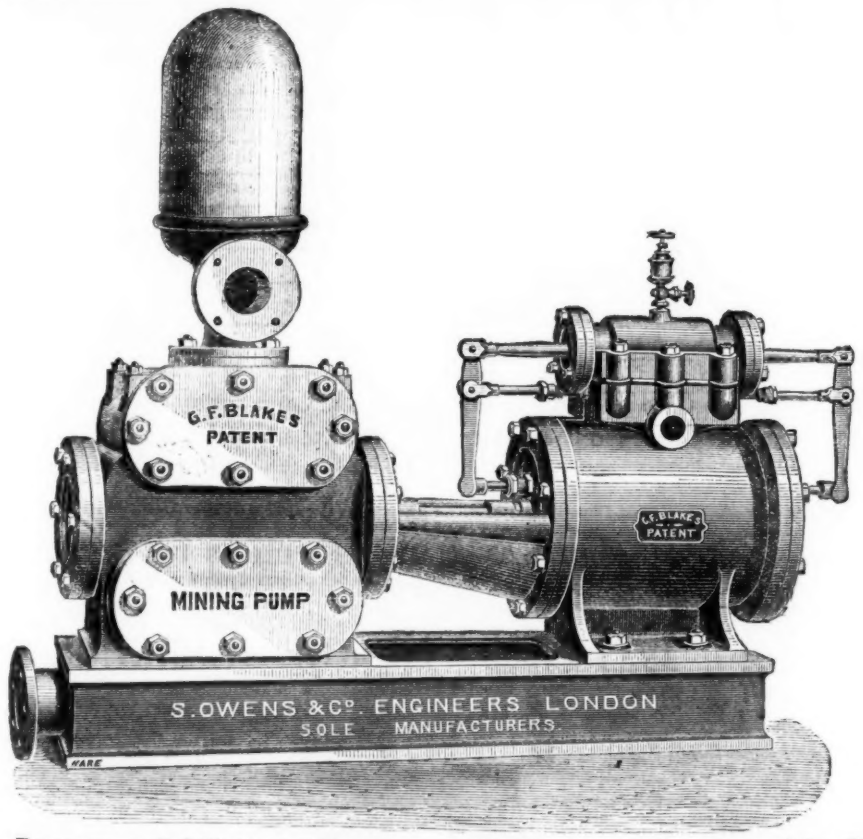
These PUMPS from their SIMPLICITY, RELIABILITY, DURABILITY, and ECONOMY are SPECIALLY SUITED FOR MINING PURPOSES, where large quantities of water require to be raised from great or medium depths with CERTAINTY. They are double-action in their construction, throwing a constant stream of water, can be made of any stroke to suit the space in which they have to work, can be arranged with any combination of steam and water cylinders to suit the pressure and lift against which it is desired to work them, are made of the very best materials and highest class of workmanship, and all working parts can be readily got at by any ordinary workman, and replaced if necessary by a duplicate part (all such being interchangeable) in the shortest possible time. For situations where gritty and sandy water has to be pumped the DOUBLE-PLUNGER PATTERN is recommended. Where space is limited the PISTON PUMP is better suited, a novel feature of which is the PATENT REMOVEABLE LINING, which can be removed in a few minutes and substituted with a new one, without disturbing any other part of the pump.



Blake's Improved Double-plunger Steam Pump.

S. OWENS AND CO.,

In placing the BLAKE STEAM PUMP before the mining world, believe they are offering the BEST, MOST RELIABLE, and ECONOMICAL PUMP that has yet been made, and solicit an inspection of various sizes in operation at their works, Whitefriars-street, Fleet-street, London.



Blake's Improved Mining Pump, with Patent Removeable Lining to Pump Cylinder,

Any combination of these Pumps may be had to suit circumstances. The following are some of the SIZES SUITABLE FOR MINING PURPOSES:—

Dia. of steam cylinders.. In.	12	12	12	12	14	14	14	16	16	16	16	18	18	18	18	20	20	20	20	24	24
Dia. of water cylinders.. In.	3	4	5	6	4	5	6	4	5	6	8	4	5	6	8	5	7	8	9	6	8
Length of stroke ..... In.	18	18	18	24	24	24	24	24	24	24	24	24	30	30	30	30	30	36	36	36	42
No. of strokes per minute..	30	30	30	30	25	25	25	22	22	22	22	22	22	22	22	20	20	17	17	17	15
Quantity in gallons per hour, approxmately ...	1440	2610	4200	5940	2940	4620	6600	2646	4158	5940	10620	2646	5160	7500	13260	4586	9000	12360	15660	5720	12000

PRICES FOR THE ABOVE, OR ANY SPECIAL SIZE, AND ILLUSTRATED CATALOGUES FURNISHED ON APPLICATION.

PATENT CONDENSERS

can be supplied for any size pump to effect a saving of fully 30 per cent. in the consumption of fuel, greatly increasing their efficiency

The Blake Pump will work under water, and as efficiently with compressed air as with steam.

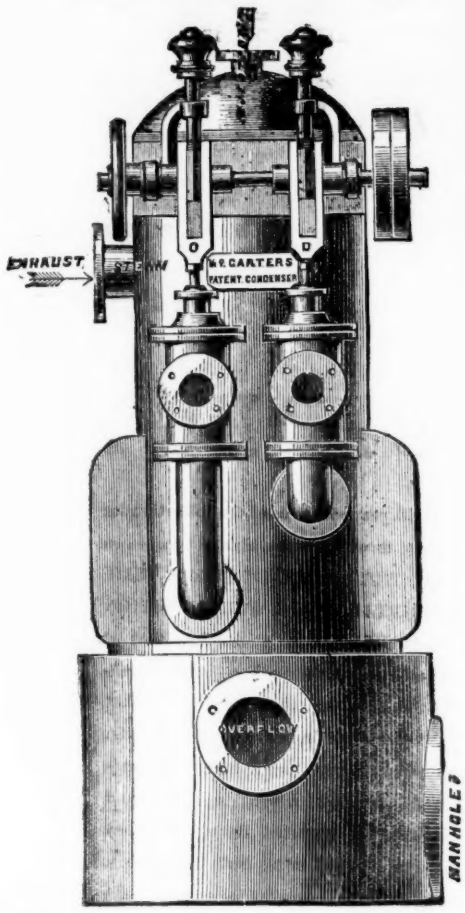
BLAKE'S DONKEY PUMPS FOR FEEDING BOILERS KEPT IN STOCK.

LICENSED MAKERS.

KIRK, RAMSDEN, AND CO.

(LIMITED),

HUDDERSFIELD.



These Condensers can be placed inside or outside of the engine-house. They draw their own injection water, and require no foundation. Specially adapted to Pumping and Winding Engines, effecting a saving from 20 to 30 per cent. in coal, and increases the power of the Engine.

Engineers, Millwrights, Founders,

AND

FORGE PROPRIETORS.

Makers of Pumping, Winding, and Blowing Engines, Condensing and Non-condensing. Horizontal and Beam Engines for all purposes.

MINERS' LAMP

AND

GAUZE MANUFACTORY,

Established Half-a-century.

JOSH. COOKE AND CO.

J.C B TRADE MARK

SAFETY LAMPS

MADE to DRAWING, DESCRIPTION, or MODEL. Illustrated Price Lists free, by post or otherwise.

VALUABLE TESTIMONIALS FROM EMINENT FIRMS.

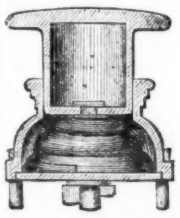
MIDLAND DAVY LAMP WORKS,

BELMONT PASSAGE, LAWLEY STREET,

BIRMINGHAM.

Specimens may be seen at the PHILADELPHIA EXHIBITION.

THOMAS TURTON AND SONS,



MANUFACTURERS OF

CAST STEEL for PUNCHES, TAPS, and DIES

TURNING TOOLS, CHISELS, &c.

CAST STEEL PISTON RODS, CRANK PINS, CONNECTING RODS, STRAIGHT and CRANK AXLES, SHAFTS and

FORGINGS of EVERY DESCRIPTION.

DOUBLE SHEAR STEEL, BLISTER STEEL, SPRING STEEL, GERMAN STEEL. FILES MARKED T. TURTON EDGE TOOLS MARKED WM. GREAVES & SON

Locomotive Engine, Railway Carriage and Wagon Springs and Buffers.

SHEAF WORKS AND SPRING WORKS, SHEFFIELD.

LONDON WAREHOUSE, 75, QUEEN STREET, CANNON STREET, CITY, E.C

Where the largest stock of steel, files, tools, &c., may be selected from.

Second Edition. Just published, price 8s. 6d.

A NEW GUIDE TO THE IRON TRADE:

OR, MILL-MANAGERS' AND STOCK-TAKERS' ASSISTANT;

Comprising a Series of New and Comprehensive Tables, practically arranged to show at one view the Weight of Iron required to produce Boiler plates, Sheet-iron, and Flat, Square, and Round Bars, as well as Hoop or Strip Iron of any dimensions. To which is added a variety of Tables for the convenience of Merchants including a Russian Table. BY JAMES ROSE,

OPINIONS OF THE PRESS.

"The Tables are plainly laid down, and the information desired can be instantaneously obtained."—*Mining Journal*.

"900 copies have been ordered in Wigan alone, and this is but a fithe of thosete whom the book should commend itself."—*Wigan Examiner*.

"The work is repleteon the subject of underground management."—M. BANEK Colliery Proprietor.

To be had on application at the MINING JOURNAL Office, 26 Fleet-street London

---

ONE MILLION STERLING

Has been paid as

COMPENSATION FOR DEATH AND INJURIES

Caused by

ACCIDENTS OF ALL KINDS,

By the

RAILWAY PASSENGERS' ASSURANCE COMPANY.

HON. A. KINNAIRD, M.P., Chairman.

PAID-UP CAPITAL AND RESERVE FUND, £180,000.

ANNUAL INCOME, £200,000.

Bonus allowed to Insurers of Five Years' standing

Apply to the Clerks at the Railway Stations, the Local Agents, or—

64, CORNHILL, AND 10, REGENT STREET, LONDON.

WILLIAM J. VIAN, Secretary.

PARIS EXHIBITION, 1867.

VIENNA EXHIBITION, 1873.

LONDON EXHIBITION, 1874.

CORNWALL POLYTECHNIC SOCIETY, 1867 and 1873.

TANGYE BROTHERS AND HOLMAN,

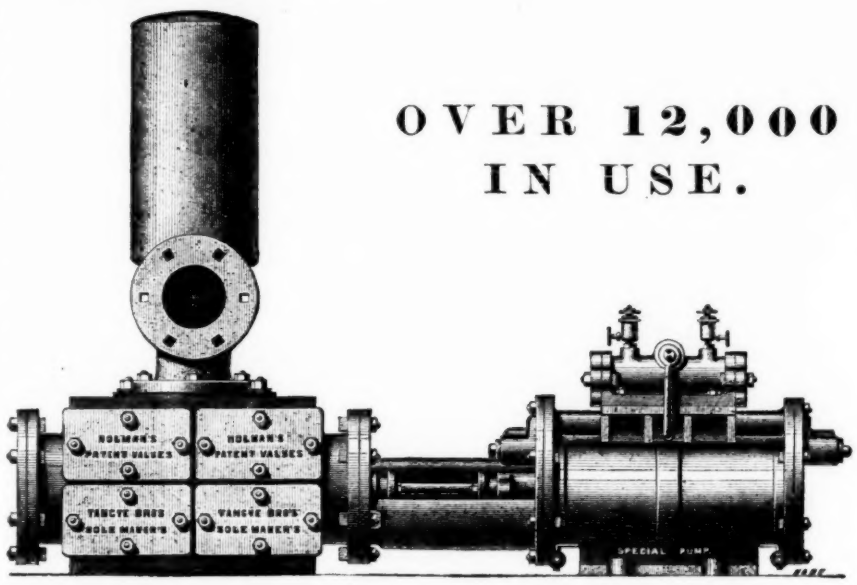
10, LAURENCE POUNTNEY LANE, LONDON, E.C.,

AND BIRMINGHAM, (TANGYE BROTHERS), CORNWALL WORKS, SOHO.

FOR

"THE SPECIAL"
DIRECT-ACTING STEAM PUMP.

After eight years of successful application for all purposes to which steam-driven pumps can be applied, THE "SPECIAL" STEAM PUMP STILL MAINTAINS THE FIRST POSITION IN THE MARKET, notwithstanding that it alone—of all direct-acting pumps—has been subjected to the great variety of severe tests that must be encountered in such a period of time. Some valuable improvements have been suggested in the course of a long experience, and their adoption has rendered the apparatus at once the simplest and most certain in action. There is absolutely no extraneous gear, and the steam cylinder is *no longer than the pump*. The valves are of easy access, and are suited for pumping fluids and semi-fluids of almost any consistency.



OVER 12,000 IN USE.

WILLIAM ELLIOT, Esq., *of the Weardale Iron and Coal Company, writes under date Sept. 17th, 1875, as follows:*—"We have now THIRTY-FIVE of your SPECIAL STEAM PUMPS in operation at the various collieries under my charge—some of them employed pumping water out of our pits to the depth of 50 fms.—others employed in the pits, and a good many feeding Boilers. I have no hesitation in saying that we have found them the Cheapest and Best Pumps of the kind we have tried. I can with confidence recommend them to intending purchasers.

Messrs. BURT, BOULTON, and HAYWOOD, *Chemical Manufacturers, of London*, have also THIRTY-EIGHT of the "SPECIAL" STEAM PUMPS in use at their works, and continue to order more.

GREAT REDUCTION IN PRICES.

The following sizes are suitable for low and medium lifts:—

Diameter of Steam Cylinder ...In.	3	4	4	4	5	5	5	6	6	6	6	7	7	7	7	7	8	8	8	8	8	9	9	9	9	9	10	10
Diameter of Water Cylinder ...In.	1½	2	3	4	3	4	5	3	4	5	6	3	4	5	6	7	4	5	6	7	8	5	6	7	8	9	5	6
Length of Stroke .....In.	9	9	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	18	12	12	12	18	24	12	12
Gallons per hour	680	815	1830	3250	1830	3250	5070	1830	3250	5070	7330	1830	3250	5070	7330	9750	3250	5070	7330	9750	13,000	5070	7330	9750	13,000	16,519	5070	7330
Price .....£	**16**	**18**	**20**	**25**	**22 10**	**27 10**	**32 10**	**25**	**30**	**35**	**40**	**30**	**35**	**40**	**45**	**50**	**40**	**45**	**50**	**55**	**65**	**50**	**55**	**60**	**70**	**85**	**55**	**60**

CONTINUED.

Diameter of Steam Cylinder..In.	10	10	10	10	12	12	12	12	12	12	14	14	14	14	14	14	16	16	16	16	16	18	18	18	18	18	18	18
Diameter of Water Cylinder..In.	7	8	9	10	6	7	8	9	10	12	7	8	9	10	12	14	8	9	10	12	14	9	10	12	14	16	12	14
Length of Stroke .....In.	12	18	24	24	18	18	18	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Gallons per hour	9750	13,000	16,519	20,000	7330	9750	13,000	16,519	20,000	30,000	9750	13,000	16,519	20,000	30,000	40,000	13,000	16,519	20,000	30,000	40,000	16,519	20,000	30,000	40,000	50,000	20,000	30,000
Price .....£	**55**	**75**	**90**	**100**	**75**	**80**	**85**	**110**	**120**	**140**	**110**	**120**	**130**	**140**	**160**	**180**	**140**	**150**	**160**	**180**	**200**	**180**	**190**	**210**	**230**	**250**	**210**	**230**

Intending purchasers of Steam Pumps would do well to observe the great length of stroke, short steam cylinder, and short piston of the "Special" Steam Pump, as compared with the short stroke, long steam cylinder, and long piston of the Pumps of other makers, as the efficiency and durability of the machine, and the space occupied by same, greatly depend upon this. The advantage of long strokes will be obvious when purchasers are reminded that each set of suction and delivery valves of a "Special" Steam Pump with 24 in. stroke, running at 120 ft. per minute, would open and close only 30 times per minute, as against 120 times per minute in a Pump with only 6 in. stroke performing same duty.

The Special" Steam Pump can be worked by Compressed Air as well as by Steam.

HUNDREDS of these PUMPS are USED for HIGH LIFTS IN MINES, for which purpose they are made with 21, 24, 26, 28, 30, and 32-inch Steam Cylinders, and 36 48 and 72-inch Strokes.

Holman's Patent Self-acting Exhaust Steam Condensers,

FOR ALL KINDS OF STEAM PUMPS AND HIGH-PRESSURE STEAM ENGINES.

TURNS WASTE STEAM INTO GREAT POWER.

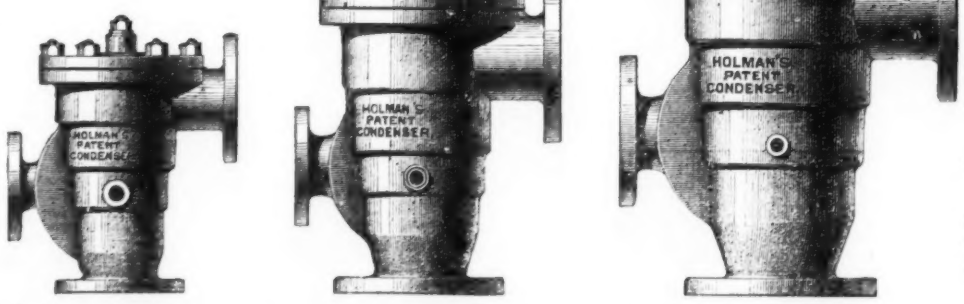
REQUIRES NO THREE-WAY COCKS, CHECK, or REGULATING VALVES.

SAVES HALF ITS COST IN PIPES AND CONNECTIONS.

PREVENTS ALL ESCAPE OF STEAM IN MINES OR ELSEWHERE.

REQUIRES NO EXTRA SPACE.

Saves 20 to 50 per Cent of Fuel.



These Condensers are made to suit any size and kind of Steam Pump. They form a part of the suction pipe of the Pump, and while they effectually condense the exhaust steam, they produce an average vacuum of 10 lbs. per square inch on the steam piston, increasing the duty of the Engine, and effecting a saving in fuel of from 20 to 50 per cent.

In Mining operations these Condensers will be of great value.

All Boiler Feeders are recommended to be fitted with these Condensers, as not only is the exhaust steam utilised in heating the feed water, but is returned with it into the boiler.

The following Testimonial gives one Example of the Power Gained by the action of Holman's Patent Condensers:—

MORLEY COLLIERY, WIGAN, October 16th, 1874.

Messrs. TANGYE BROTHERS AND HOLMAN.

GENTLEMEN,—I have great pleasure in recording my entire satisfaction with the working of the Holman's Patent Steam Pump Condenser which you have supplied to us. The complete condensation of the steam is, apart from its value in the strict economical sense, a most valuable feature in the drainage of underground workings. The perfect manner in which this important result is accomplished by your Condenser is extremely creditable to you, and merits the thanks and commendation of the Mining Engineer. When we start the "Special" Steam Pump the Condenser commences working automatically, and maintains a constant vacuum of 10½ lbs. per square inch, even when we run the Pump upwards of 80 strokes (106 feet) per minute. It may perhaps be interesting to you to know that when we were running the Pump at 84 strokes (168 feet) per minute, the steam gauge indicating a steam pressure of 36 lbs. per square inch, 80 yards from the Pump, and the Condenser vacuum gauge on the exhaust pipe indicating a steady vacuum of 21½ inches, I turned the exhaust steam from the Condenser into the atmosphere, when the speed at once fell to 44 strokes per minute. The working economy thus shown is really so great that the cost of the Condenser must be saved in a very short time. (Signed) J. THOMPSON.

From 30s. to 40s. per inch diameter of Steam Cylinder, according to the relative Diameter of Pump for which Condenser is required.

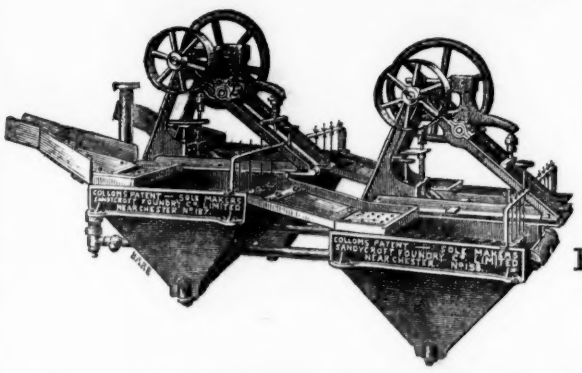
NORTH OF ENGLAND HOUSE ... ... TANGYE BROTHERS AND RAKE, ST. NICHOLAS BUILDINGS, NEWCASTLE-ON-TYNE.
SOUTH WALES HOUSE... ... ... TANGYE BROTHERS AND STEEL, Tredegar Place, NEWPORT, Mon.; and Oxford Buildings, SWANSEA.

PATENT IMPROVED ORE WASHING & DRESSING MACHINES.

THE SANDYCROFT FOUNDRY & ENGINE WORKS CO. (LIMITED), NEAR CHESTER

LATE THE MOLD FOUNDRY CO. (ESTABLISHED 1838).

SOLE MAKERS IN GREAT BRITAIN.



HUNDREDS IN USE.

FULL PARTICULARS,
PHOTOGRAPHS, TESTIMONIALS, AND PRICES,
UPON APPLICATION.

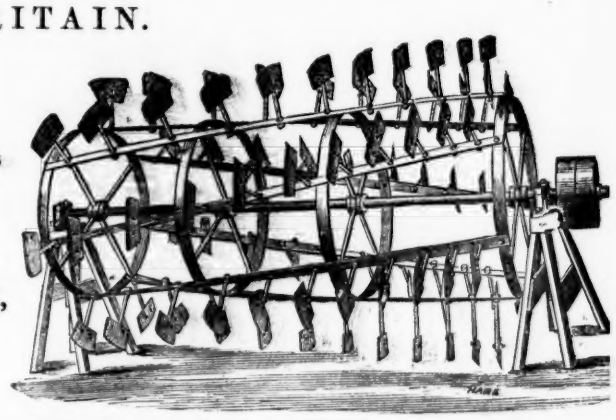
Will supply Designs, and all the necessary Plant for laying out Dressing Floors; also

MANUFACTURERS OF EVERY VARIETY OF

MINING MACHINERY,

PUMPING & WINDING ENGINES,

PITWORK, CRUSHING MILLS,
ROLLS
OF PECULIARLY HARD AND TOUGH MIXTURE
&c., &c.



COLLOM'S PATENT AUTOMATIC ORE WASHING MACHINE, working at the following and many other Lead, Copper, Blende, and Tin Mines:—Great Laxey, Cape Copper, Pontgibaud, Linares, Alamillos, West Tolgus, Lisburne, Minera Halvans, Snailbeach, &c.; and also at Messrs. Vivian and Sons' Works, Swansea.

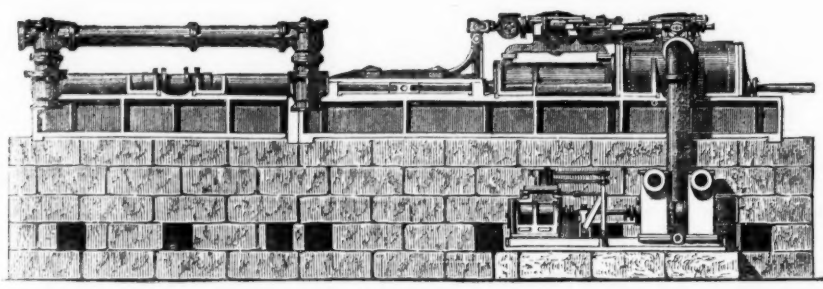
PATENT IMPELLER, OR KNIFE BUDDLE, in use at the following and many other Lead, Copper, Blende, and Tin Mines:—The Van, Roman Gravels, Tankerville, Ladywell, Lisburne, East Black Craig, Old Treburgett, Penhale & Barton, Bog, Linares, Fortuna, Alamillos, Minera Halvans, &c.

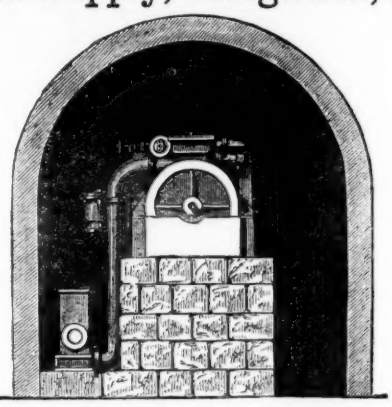
LONDON OFFICE: 6, QUEEN STREET PLACE, E.C.

HATHORN, DAVIS, CAMPBELL, AND DAVEY,

MAKERS OF

The Differential Pumping Engine, Hydraulic Pumping Engines, Cornish Engines, Differential Blowing Engines, Compound Rotative Engines, the Separate Condenser, Hydraulic Machinery, Mining Plant of all kinds, and Machinery for Water Supply, Irrigation, &c.





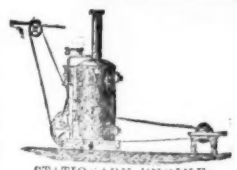
THE COMPOUND DIFFERENTIAL ENGINE AND FORCE PUMPS,

With Separate Condenser, as applied Underground, forcing 700 gallons per minute 920 feet high.

SUN FOUNDRY, LEEDS.

FURTHER PARTICULARS ON APPLICATION

CHAPLIN'S PATENT PORTABLE STEAM ENGINES & BOILERS.



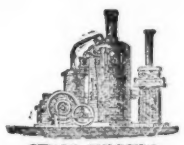
STATIONARY ENGINE.
No building required.

HOISTING ENGINE.
With or without Jib.

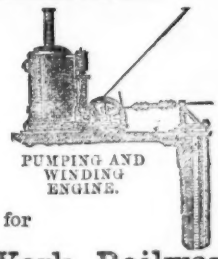
STEAM CRANE.
For Wharf or Rail.

CONTRACTORS' LOCOMOTIVE.

TRACTION AND ROADWAY ENGINE.



SHIPS ENGINE AND DISTILLER.



PUMPING AND WINDING ENGINE.

The ORIGINAL combined Vertical Engines and Boilers, introduced by Mr. CHAPLIN in 1855, specially designed and adapted for

Pumping, Winding, Hoisting, Sawing, Driving Machinery, and for General Contractors' Work, Railway Sidings, Coal Mines, Quarries, Gas Works, &c.

WIMSHURST, HOLLICK, & CO., ENGINEERS, 34, WALBROOK, LONDON, E.C.

WORKS:—REGENT'S CANAL DOCK, 602, COMMERCIAL ROAD EAST, LONDON, E. (Near Stepney Station).

Parties are cautioned against using or purchasing Imitations or Infringements of these Patent Manufactures.

ARTESIAN BORINGS,

FOR WATER SUPPLY to TOWNS, LAND IRRIGATION, and MINERAL EXPLORATIONS, may be executed of any diameter, from 6 in. to 36 in., and to any depth to 2000 ft.,

Pistons & Air-pump Buckets fitted with Patent Elastic Metallic Packing

of which upwards of 8684 have been made to March, 1875.

MATHER AND PLATT,

MAKERS OF LARGE PUMPS AND PUMPING ENGINES.

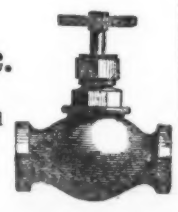
Improved Valves and Taps for Water, Steam, Gas, &c.

PATENT STEAM EARTH-BORING MACHINE

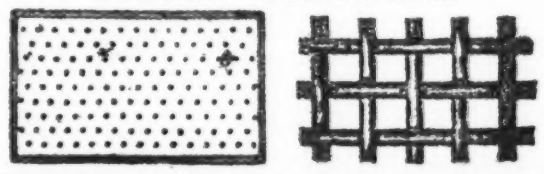
ENGINEERS and MACHINE MAKERS to CALICO PRINTERS, BLEACHERS, DYERS, and FINISHERS.

SALFORD IRONWORKS, MANCHESTER.

PRICES AND PARTICULARS ON APPLICATION.



STRONG WIREWORK.



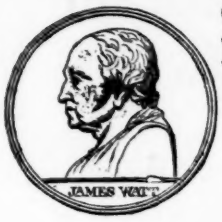
STRONG WIREWORK, the cross wires equally bent; also BEST STAMP GRATES, both of iron and copper, and punched copper plates. DITTO TUBBED. All the above promptly supplied at

W. ESCOTT'S MINING MATERIAL DEPOT,
TAVISTOCK, DEVON.

FOREIGN ORDERS PROMPTLY EXECUTED.

THE NEWCASTLE DAILY CHRONICLE
(ESTABLISHED 1764.)
THE DAILY CHRONICLE AND NORTHERN COUNTIES ADVERTISER
Offices, Westgate-road, Newcastle-upon-Tyne; 50, Howard street North Shields; 195 High-street, Sunderland.

BUYERS are CAUTIONED against Purchasing any Infringements of H.R.M.'s Numerous PATENTS.



Ore Crushers, H.R.M.'s New Patent Crushing Jaw EXTENSIVELY USED BY MINE OWNERS.

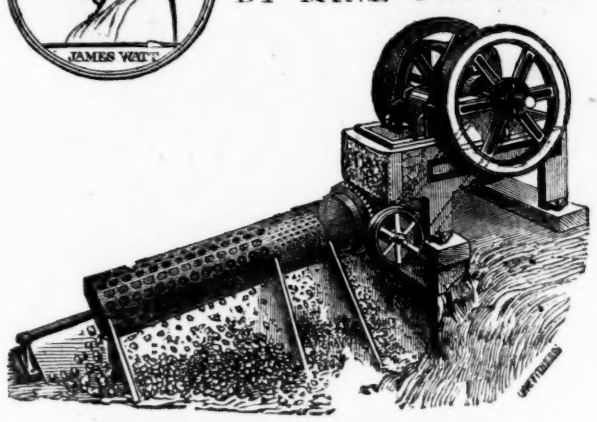
H.R. MARSDEN, LEEDS,

ENGINEER.

Mining Improvements

Revolving Picking Table.

1150 NOW IN USE.



FIXED MACHINE AND SCREEN,

Specially designed and largely used for

rushing Pyrites, Limestone, Cement, Coal, Rocks, &c.,

AT ALL THE PRINCIPAL WORKS IN THE KINGDOM.

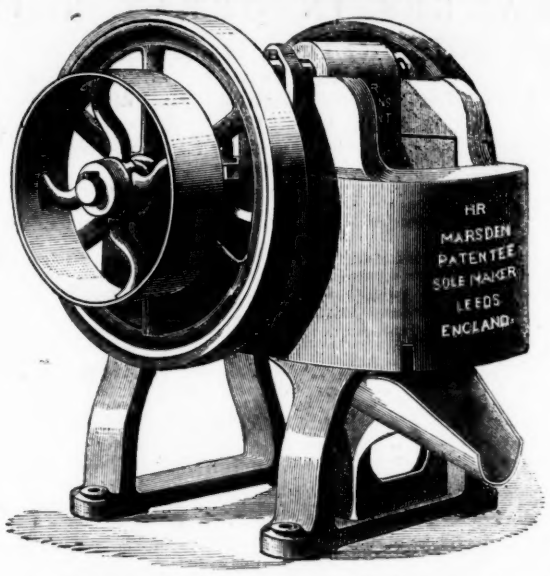
Takes in 20 in. by 9 in., and is shown by TESTIMONIALS to be breaking from 1000 to 1200 tons per day of 10 hours, at

THREE HALF-PENCE PER TON.

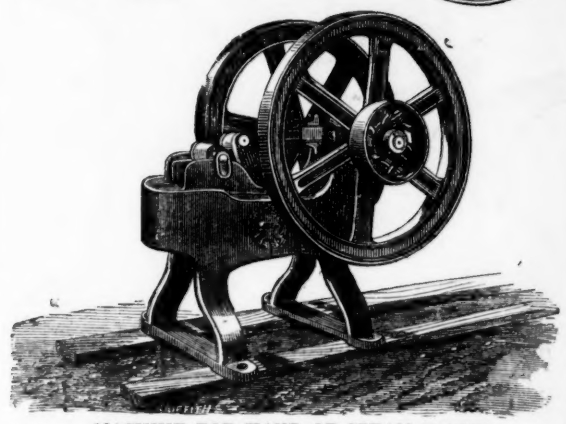
FEW WORKING PARTS.

SMALL WEAR AND TEAR.

FREEDOM FROM BREAKAGE.



"The Machine is well designed, simple, but substantially made and is capable of reducing any material to fine gravel, such as copper ore, and is certainly preferable to the stamps in use for that purpose."—*Mining Journal.*



MACHINE FOR HAND OR STEAM POWER.

For making gravel for gentlemen's walks in parks and gardens, also for grinding emery, flints, fossils, &c., for pulverising silver, copper, and other ores; also gold quartz, and especially useful to chemists and metallurgists for sampling, as it is capable of pulverising the hardest material, and can be turned by one man with ease.

REFERENCES TO ALL PARTS OF THE WORLD.

SIMPLICITY OF CONSTRUCTION. EXCELLENCE OF SAMPLE. ECONOMY OF POWER

THESE STONE BREAKERS AND ORE CRUSHERS ARE UNIVERSALLY PRONOUNCED THE ONLY PERFECT SUCCESS.

For Catalogues, Tetimonials, &c., apply to the—

Sole Maker & Patentee, H. R. MARSDEN, SOHO FOUNDRY, LEEDS, ENGLAND.

M'TEAR AND CO.'S CIRCULAR FELT ROOFING,

FOR GREAT ECONOMY AND CLEAR WIDE SPACE.

For particulars, estimates, and plans, address,—

M'TEAR & CO.,

ST. BENET CHAMBERS, FENCHURCH STREET, LONDON, E.C.;

4, PORTLAND STREET, MANCHESTER;

OR

CORPORATION STREET, BELFAST.

The above drawing shows the construction of this cheap and handsome roof, now much used for covering factories, stores, sheds farm buildings, &c., the principal of which are double bow and string girders of best pine timber, sheeted with ½ in. boards, supported on the girders by purlins running longitudinally, the whole being covered with patent waterproof roofing felt. These roofs so combine lightness with strength that they can be constructed up to 100 ft. span without centre supports, thus not only affording a clear wide space, but effecting a great saving both in the cost of roof and uprights.

They can be made with or without top-lights, ventilators, &c. Felt roofs of any description executed in accordance with plans. Prices for plain roofs from 30s. to 80s. per square, according to span, size, and situation.

Manufacturers of PATENT FELTED SHEATHING, for covering ships' bottoms under copper or zinc.

DRY HAIR FELT, for deadening sound and for covering steam pipes, thereby saving 25 per cent. in fuel by preventing the radiation of heat.

PATENT ASPHALTE ROOFING FELT, price 1d. per square foot.

Wholesale buyers and exporters allowed liberal discounts.

PATENT ROOFING VARNISH, in boxes from 3 gallons to any quantity required 8d. per gallon.

HEPBURN'S PUMP LEATHER WATERPROOF

By a special method of preparation, this leather is made solid, perfectly close in texture, and impermeable to water; it has, therefore, all the qualifications essential for pump buckets, and is the most durable material of which they can be made. It may be had of all dealers in leather, and of—

I. AND T. HEPBURN AND SONS,

TANNERS AND CURRIERS, LEATHER MILLBAND AND HOSE PIPE MANUFACTURERS,

LONG LANE, SOUTHWARK, LONDON

Prize Medals, 1851, 1855, 1862, for

MILL BANDS, HOSE, AND LEATHER FOR MACHINERY PURPOSES.

THE GREAT ADVERTISING MEDIUM FOR WALES.

THE SOUTH WALES EVENING TELEGRAM

(DAILY), and

SOUTH WALES GAZETTE

(WEEKLY), established 1857,

the largest and most widely circulated papers in Monmouthshire and South Wales.

CHIEF OFFICES—NEWPORT, MON.; and at CARDIFF.

The "Evening Telegram" is published daily, the first edition at Three P.M., the second edition at Five P.M. On Friday, the "Telegram" is combined with the South Wales Weekly Gazette," and advertisements ordered for not less than six consecutive insertions will be inserted at an uniform charge in both papers.

P. O. O. and cheques payable to Henry Russell Evans, 14, Commercial-street, Newport, Monmouthshire.

MINING PROSPECTUSES AND ANNOUNCEMENTS OF PUBLIC COMPANIES should be inserted in the BARNSTAPLE TIMES, published every Tuesday, and in the DEVON POST, published every Saturday, as these papers circulate largely throughout Devon and Cornwall, where many thousands of investors reside. Legal and Public Companies' advertisements, 6d. a line each insertion; Trade and Auctions, 4d. a line; Wanteds, &c., 20 words, 1s.

Published by J. B. JONES, Boutport-street, Barnstaple, Devon, to whom all orders by post or telegraph should be sent.

BRYDON AND DAVIDSON'S ROCK DRILL.

SELECTED BY THE BRITISH AND OTHER GOVERNMENTS.

Reduced prices of this Rock Drill (formerly called "Kainotomon"), Nos. 1 and 2, £32 and £34.

SUBJECT TO DISCOUNT.

IMPROVED AIR COMPRESSORS.

Makers of Pumping and Winding Engines, Steam Hammers, Boilers, Pump Pipes, &c., &c. Castings of all kinds.

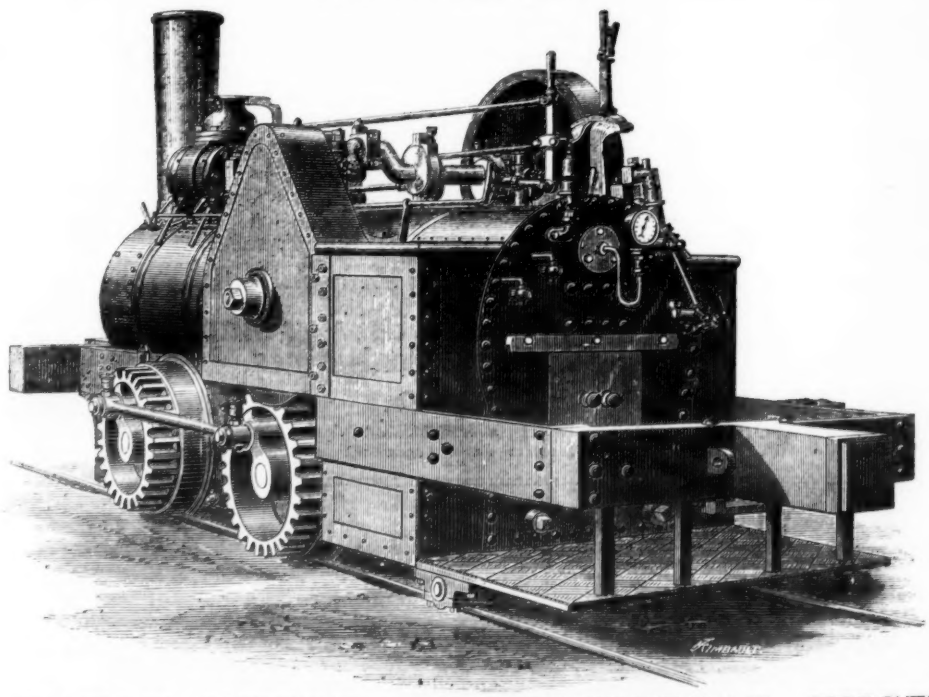
BRYDON AND DAVIDSON, ENGINEERS,

WHITEHAVEN.

LEWIN, POOLE, DORSET.

Speciality in cheap colliery and contractors' Locomotives, and very small Locomotives for replacing Horses.

Prices from £300 upwards.



PORTABLE FIXED AND VERTICAL ENGINES.

WINDING AND PUMPING GEAR.

The above represents LEWIN'S STEEL-GEARED LOCOMOTIVE, from a photo of one working on a 22 in. gauge, for replacing horses.

STREET AND ROAD TRAMWAY LOCOMOTIVES,

ON THE MOST IMPROVED PRINCIPLE.

Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietor) at their offices, 26, FLEET STREET, E.C., where all communications are requested to be addressed.—*December 2, 1876.*